JPRS 80441

30 March 1982

# USSR Report

## ENERGY

No. 94

FBIS FOREIGN BROADCAST INFORMATION SERVICE

# NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

# PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

JPRS 80441

30 March 1982

# USSR REPORT

# ENERGY

## No. 94

## CONTENTS

ELECTRIC POWER

Uzbek Power Minister on Future Developments
(A. Khamidov; PRAVDA VOSTOKA, 22 Dec 81) .................... 1

Sapozhnikov on Power Industry Prospects
(F. Sapozhnikov; STROITEL'NAYA GAZETA, 23 Dec 81) .......... 3

Levees To Protect Nizhnekamskaya GES Overflow Zone Land
(A. Laletin; TRUD, 5 Jan 82) .............................. 5

Mogilevskaya TETs-2' New Unit on Stream
(SOVETSKAYA BELORUSSIYA, 9 Jan 82) ........................ 7

Briefs

Kazakh Power Minister Speech 9
Lithuanian Developments 9
Kiev TETs-6 Start-Up 10
Transcaucasus Transmission Line 10
Azerbaijan GRES Start-Up 10
Dneproges Output 10
Beloyarsk Fast Breeder Reactor 10
Yakutsk GRES 11
Shevchenko-Karazhanbas Transmission Line 11
Novo-Ziminskaya Tets 11
Ryazan GRES 11
Helicopters String Power Lines 11
Helicopters Do Tayga Line 11
Konakovskaya GRES 11
Surgutskaya GRES Unit 13 12
330-Meter GRES Stack 12
Kurpsayskaya GES 12
Kurpsayskaya GES Second Section 12
Vorkuta Coking Coal 13

South Yakutia Coal 13
Tomsk Oil Output 13

FUELS

Ways To Improve Enrichment Plant Output Offered
(I. P. Zhukov; UGOL'UKRAINY, Dec 81) .......................... 14

Hydraulic Pipeline Transport of Coal Suggested
(Yu. G. Svitlyy; UGOL'UKRAINY, Dec 81) ........................ 20

Coal Production Reviewed, Higher Output Appealed For
(UGOL', Jan 82) ............................................... 23

Development of Karshi Gas-Chemical Complex Forges Ahead
(Yu. Kruzhilin; EKONOMIKA I ZHIZN', Dec 81) ................... 30

Mogilev Gas Piepeline Open
(SOVETSKAYA BELORUSSIYA, 8 Jan 82) ............................ 37

Balakhany Oil Report
(L. Aleynik; SOTSIALISTICHESKAYA INDUSTRIYA, 30 Dec 81) ... 39

Kaspmorneftegazprom Socialist Pledges
(VYSHKA, 6 Jan 82) ............................................ 41

Caspian Offshore Drilling Problems
(U. Usbakhanov, et al.; VYSHKA, 9 Jan 82) ................. 43

Briefs

Urengoy-Novopskov Pipeline 47
Tyumengazprom Production Pledge 47
Azerbaijan Exploratory Drilling 47
New Offshore Rig 47
Enhanced Crude Oil Recovery 48
Mokeikha-Zybinskoye Peat 48
Caucasus Geothermal Power 48
Geothermal Energy 49
Solar Energy Conference 49
New Book on Coal Products 50

## ELECTRIC POWER

### UZBEK POWER MINISTER ON FUTURE DEVELOPMENTS

Tashkent PRAVDA VOSTOKA in Russian 22 Dec 81 p 2

[Article by A. Khamidov, minister of Power and Electrification, Uzbek SSR: "In Accordance With Lenin's Behest"]

[Excerpt] Thermal electric power stations are the foundation of electric power production in this republic. They turn out about 85 percent of the power that is produced. Their growth in capacity derives mainly from the installation of power units with a unit capacity of 210,000 and 300,000 kilowatts.

Hydroelectric construction is being continued actively. Construction of the cascade of Srednechirchik GES's was completed during the 10th Five-Year Plan. The annual output of all the Uzbek GES's--about 5 billion kilowatt-hours--makes for a saving of 1.5 million tons of conventional fuel.

The total installed capacity of the republic's electric power stations has now reached 8.7 million kilowatts, and the annual electric power output is 34 billion kilowatt-hours. The length of electric power transmission lines carrying 35 kilovolts or more is 20,000 kilometers, and there are more than 160,000 kilometers of rural transmission lines of all voltages.

The construction of new high-tension lines is furthering the development of the Unified Power System of the Republics of Central Asia and South Kazakhstan, which is a unique form of power industry organization and represents a complex of power stations and networks developing under a unified government plan on a regional scale, with the stations and networks united in a common technological system with unified operational control.

It is to be pointed out that with respect to the level of concentration of capacity and the centralization of power supply, with respect to central heating development, the unit capacities of machinery and stations, the classes of voltage used in the networks and economy of operation, the unified electric power system holds the lead positions in world power engineering.

The development of the Uzbek SSR's economic system is based wholly on the utilization of its own fuel and power resources. The problem of their rational utilization remains a most important one however.

The decisions of the 26th CPSU Congress posed the problem of implementing a new energy program providing for qualitative changes in the structure of the fuel and power balance due primarily to the construction of large thermal electric power stations based on open pit coal deposits, and further involvement of hydro resources in the energy balance with regard to their complex utilization.

It is envisaged that annual production of electric power in the republic by the end of the five-year plan will reach 44-45 billion kilowatt-hours.

Along with further development of existing thermal electric power stations, construction has gotten under way on new ones such as the Novo-Angrenskaya Station with power units of 300,000 kilowatts each, and Talimardzhanskaya Station with power units of 800,000 kilowatts each.

The completion of the Galkentskaya GES is impending as is the start of preparatory operations on construction of the Pskemskaya GES with a designed capacity of 450,000 kilowatts.

Network construction volume will increase considerably, especially as regards high-tension lines such as the Karakul'-Guzar 500-kilovolt line and others.

Much attention will be devoted to the assimilation of new energy sources, solar energy in particular.

The first solar electric power station in the USSR is being built in the Crimea. The experience gained from designing and building that one will be used for a like construction project in Uzbekistan.

The strong energy base developed in the republic has enabled more extensive introduction of advanced contemporary equipment and a considerable rise in the power-worker ratio, which,in the end, makes for upgrading the well-being of the Soviet people and improving conditions for their work and everyday living, i.e., it aids in solving the fundamental socio-economic problems raised by the party.

The consumption of electric power by agriculture has thus increased. Practically all of the republic's kolkhozes and sovkhozes are supplied from centralized sources.

Also, per the decisions of the 26th CPSU Congress, the power-worker ratio in agriculture is to be raised by a factor of 1.4-1.5. There are also particular requirements for reliability of the power supply for rural consumers and there's much work yet to be done on that.

Fulfilling plans and socialist obligations, the sector's workers have provided throughout the year an uninterrupted supply of electricity and heat for all their consumers. The most appreciable successes were achieved by the collectives of the Kuvinskaya and Beruniyskaya Rayon Electric Power Stations and the thermal automation and measurements shops of the Navoiyskaya and Angrenskaya GRES's.

5454
CSO: 1822/78

ELECTRIC POWER

## SAPOZHNIKOV ON POWER INDUSTRY PROSPECTS

Moscow STROITEL'NAYA GAZETA in Russian 23 Dec 81 p 2

[Article by F. Sapozhnikov, deputy minister of USSR Power and Electrification: "A Key Sector"]

[Excerpts] Electric power has always been accorded the role of the front-running sector of industry. In just the last 30 years the production of electric power in the USSR has grown more than 14-fold. Nearly 1.3 trillion kilowatt-hours were produced here in 1980. The Unified Power System, uniting stations that produce over 85 percent of all electric power, is in operation. Its existence enables the building of very high-powered stations and the installation of high-unit-capacity machinery in them.

It's a well known fact that electric power engineering plays a major role in building the nation's fuel-energy complex, but is itself highly dependent on that complex. In connection with the use of the main hydropower resources in the European USSR, it has become necessary to drastically reorient to other sources of energy there. The 11th Five-Year Plan poses the problem of deriving all projected growth of electric power production in that part of the country solely from nuclear power stations. The production of electric power at thermal stations will grow, for the most part, based on the use of coal supplies of the Ekibastuz and Kansk-Achinsk Basins and Tyumenskaya Oblast gas. The incorporation of the energy of the rivers of Siberia and Central Asia into the nation's energy balance is continuing. The 1500-kv dc Ekibastuz-Center and the 1150-kv ac Ekibastuz-Ural high-power transmission lines have to be built.

The construction of large-scale power complexes such as are represented by nuclear stations and also the groups of thermal stations at coal deposits in Siberia and Kazakhstan, requires that building production be organized on a qualitatively new basis. One such new form is the continuous long-term flow-line method. It was employed, specifically, in building the Burshtynskaya,Ladyzhenskaya and Zaporozhskaya Thermal Electric Power Stations and yielded positive results.

The USSR Ministry of Power and Electrification is devoting particular attention to fulfillment of the nuclear power station construction program. It is planned to increase the capacity of them by more than 20 million kilowatts during the current five-year plan. This will enable deriving over 10 percent of all the electric power produced in the country from nuclear power stations in 1985.

In years past much work has been done on improving nuclear station plans, the introduction of new, progressive technical decisions, increasing the industrialization level of the structures being used, and cutting down labor and material inputs. The experience gained has made it possible to develop for them a unified plan with quite good technical-economic indexes, with VVER-type reactors of a million kilowatts capacity. During the current five-year plan we will construct units in accordance with this plan at eight nuclear electric power stations, in particular at the Zaporozhskaya station which is under construction now. The unified plan makes it possible to introduce the flow-line method of construction, the basis of which is not only the organization of operations on a coordinated flow schedule at the units of one project, but also the shifting of the builders and equipment from project to project under the schedule. To this end it is necessary to set up adequate inventory to provide timely financing and supply of materials and equipment. The guarantee of a successful fulfillment of the nuclear station construction program is the supply of the equipment by plants on time, at top quality and fully factory-ready.

The flow-line method of construction assumes the maximum industrialization of operations. This can be gained by way of specialized construction industry enterprises. Such an enterprise, known as a nuclear power construction combine, has already been established on the site of the Zaporozhskaya Nuclear Electric Power Station.

Nuclear reactors will also be used for the simultaneous production of electricity and heat--the ATETs [nuclear heat and electric power station].

The nuclear power station reactors don't accommodate a quick and substantial change of load. So, coming to their aid we have pumped-storage power stations [GAES] with machinery that's able to function as both hydraulic generator and electric pump. When loads are down the pumped storage stations function as pumping facilities, moving water from lower basin to upper. When loads are up they turn into normal hydroelectric power stations, taking on the load peaks. A unified plan for the construction of these stations has been developed, under which the Zagorskaya GAES and the Kayshyadorskaya GAES--respectively 1.2 and 1.6 million kilowatts capacity--are already under way.

Electric power builders, especially builders of hydro facilities, often take part as well in the construction of industrial enterprises in the zone of their activity. In recent years they have done large amounts of work on such industrial complexes as the Volga Automobile Plant, KamAZ, Atommash, the Ust'-Ilimskiy timber industry complex and many others.

The 11th Five-Year Plan is for Soviet power engineering not just a five-year plan of sector growth and improvement, but also a period of major sector re-equipping, of departure for new shores. The nation's power worker and builder collectives have extensively expanded competition for successful fulfillment of the tasks of the first year of the five-year plan and the decisions of the 26th CPSU Congress.

5454
CSO: 1822/78

ELECTRIC POWER

## LEVEES TO PROTECT NIZHNEKAMSKAYA GES OVERFLOW ZONE LAND

Moscow TRUD in Russian 5 Jan 82 p 1

[Article by A. Laletin, Neftekamsk, Bashkirskaya ASSR: "Land That Is Shielded From the Water"]

> [Text] Kamgesenergostroy builders are going to put in over a hundred kilometers of levees in the lower parts of the Belaya and Kama Rivers in the Nizhnekamskaya GES overflow zone in order to protect tens of thousands of hectares of fertile land and a number of oil deposits in Bashkirskaya and Tatarskaya ASSR's.

Just beyond the town of Dyurtyuli near the right-bank lowlands of the Belaya River one encounters the first suction dredges. Streams of earth lifted from the river bottom gush from their sludge pipes onto the shore. High ridges of sand and gravel stretch along the bank behind the dredges.

"These are new shores that we're building for the Belaya River," explains Boris Girgor'yevich Nakaryakov, deputy chairman of the executive committee of the Krasnokamskiy Rayon Council of People's Deputies.

On a map diagram he points out the boundaries of the Nizhnekamsk Reservoir which is being formed. At several points the blue tongues of its coves are crossed through with numbered red lines where the man made banks will rise. One hundred and eighty-six kilometers of protective levees will preserve tens of thousands of hectares of fertile chernozem, and also oil deposits.

In the hills of upturned ground, in the chaos of the construction sites, the outlines of large segments of the levees are already appearing. The fields of the Tanyp Kolkhoz stretch out beyond the large Bashkirian village of Angasyak. They are defended from the encroachment of a future sea by a 27-kilometer levee. It will also protect a large part of an oilfield.

The earth movers are not managing to thoroughly clean up the slopes: the concrete workers of F. Kadyrov's, I. Ksenofontov's and R. Zakir'yanov's brigades are stepping on the graders' heels. Out of seven brigades on the sector, three are working on the brigade contract.

A high ridge of golden sand has linked two large levees--Angasyaksko-Yusupovskaya and Yanguz-naratovskaya. Dredge No 502 of the Naberezhnochelninsk Administration of Hydromechanization has built up a 10-meter-high bridge. Rig chief Konstantin Ivanovich Trukhin has been working for over 20 years on the transformation of the Kama. He took part in the construction of the Permskaya and Votkinskaya GES's, built up the area under the industrial base of the Nizhnekamskaya hydrostation and the islands under the oil well derricks in the Tatarskaya ASSR.

This far from new and not very powerful rig does record work--up to 2 million cubic meters of ground in a season, almost twice covering its plan quotas.

"We're working on the brigade contract," Konstantin Ivanovich enunciates the "secrets" of the dredge crew's success in brief. "Here, everybody's a jack-of-all-trades."

The levees are the front line of preparation of the Nizhnekamsk water storage basin for filling to the planned level. This should take place in the spring of 1983, and by that time 111 kilometers of levees of the first section have to be finished. That's why the rumble of machinery isn't subsiding year-round on the lower Belaya and on the Kama; the levees are growing, being poured one after the other.

Getting the levees built on time means not letting the waters of the Nizhnekamsk sea get to the protected bottom lands, fields and oilfields. Still to be done are the coating of the slopes with concrete, building of drainage networks on the protected lands, and the building of pumping stations in low places to pump out the water that will seep through the levees.

5454
CSO: 1822/78

ELECTRIC POWER

## MOGILEVSKAYA TETS-2'S NEW UNIT ON STREAM

Minsk SOVETSKAYA BELORUSSIYA in Russian 9 Jan 82

[Article: "The Power Unit Is In Operation"]

[Text] Mogilev, 8 Jan--Mogilevskaya TETs-2 will supply--guaranteed--the steadily growing needs of the Khimvolokno Production Association imeni V. I. Lenin and other of the city's enterprises for electricity and heat. A turbo-unit of 135,000 kilowatts capacity and a boiler rated at 420 tons of steam per hour have been put on stream here. This is the most powerful of the four units in operation.

Along with the builders and installers, the power workers themselves made an appreciable contribution to this labor triumph. From among the experienced operators more than 10 teams were organized and did a large amount of work on the installation and adjustment of the equipment.

A meeting was held today at the Palace of Chemists, dedicated to the successful start-up of this power complex. It was opened by A. S. Stankevich, chairman of the Mogilev gorispolkom. V. F. Mitskevich, first deputy chairman of the Belorussian SSR Council of Ministers appeared and warmly congratulated the builders, installers and operators on their triumph of labor. He conveyed greetings from the Central Committee of the Belorussian Communist Party, the Presidium of the Supreme Soviet and the Council of Ministers of the republic to the workers, engineering and technical personnel, and the service, party, trade union and Komsomol organizations of the enterprises that participated in the construction and activation of the new equipment.

V. Ye. Konovalov, first secretary of the Mogilev gorkom likewise greeted all the project participants cordially. How the collectives of builders, installers and operators made it up to this prodigious event was related at the meeting by N. P. Druzhinin, senior foreman of the turbine shop of the Minsk Administration of Tsentrenergomontazh Trust, V. A. Karpushkin, carpenter and concrete worker of the TETs-2 construction administration, V. N. Bobrov, manager of Belenergostroy Trust, V. P. Ponkratenko, a brigade leader of the Mogilev District of installation administration No 8 of Elektrotsentromontazh Trust, and V. P. Pankov, the director of Mogilevskaya TETs-2.

Inspired by the high evaluation of their labor, the Mogilev power workers pledged to assimilate the capacities put in operation a month ahead of the normal time and, in the course of the year, to give the republic's electric power system additional hundreds of millions of kilowatt-hours of electricity. The builders and installers, in turn, declared their resolve to get into operation--likewise ahead of schedule, by Power Worker's Day--TETs projects now being built--an eighth boiler rated at 420 tons of steam per hour, and other equipment.

5454
CSO: 1822/78

## ELECTRIC POWER

### BRIEFS

KAZAKH POWER MINISTER SPEECH--In his appearance [before a session of the Kazakh Supreme Soviet], deputy B. P. Ivanov, Kazakh SSR minister of power and electrification, spoke on the need to step up attention to increasing the facilities of this important sector of the economy, to the organization of repair service and to upgrading the reliability of equipment operation. There is still not sufficient concern on the part of the ministry about these matters. The speaker stressed that, during the current five-year plan, it is proposed to derive all growth of electric power production in the republic on the basis of thermal power stations using coal from the Ekibastuz Basin. New main transmission lines will become operational. The heat and electric power stations in Alma-Ata, Karaganda, Pavlodar and Tselinograd will undergo further development. The deputy brought up the matter of the importance of accelerated construction of large, new heating boiler houses in Aktyubinsk, Arkalyk, Alma-Ata, Dzhambul and other cities. The solution of pressing problems in the strengthening of the Mangyshlak power base is highly important. He went on to say that the final regulation of the flow of the Irtysh River is possible only with construction of the second section of the Shul'binskiy reservoir. For this purpose a general scheme must be worked out in the years just ahead for the complex development of the Irtysh floodplain. The development of the explored Ubaganskiy lignite basin and the future construction of a GRES complex based on it is another problem of current interest. The lagging construction of Ekibastuzskaya GRES-1 can not be tolerated. Steps are being taken now to speed up getting machines in there and operating reliably, the minister said. The power workers of the republic are striving to better supply agriculture with electric power. The deputy brought up the matter of the development of sources of heat supply in cooperation with the ministries and departments. [Excerpt] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 6 Dec 81 p 3] 5454

LITHUANIAN DEVELOPMENTS--The first year of the five-year plan was marked by substantial progress. Work done on construction of the Kayshyadorskiy pumped storage electric power station and Vil'nyus TETs-3 increased notably and significant capacities were put in service at the Mazheykskiy and Kaunas TETs's. There is much for the power workers to do in the current year. As was pointed out at the expanded meeting of the collegium of the Main Production Administration of Power and Electrification and the presidium of the republic committee of the sector's trade union, held in Vil'nyus on 13 January, 14 million rubles more than last year has been allocated this year for the development of the republic's electric power complex. The reliability of the power supply will enable considerably raising the level of the remote control system. Thanks to an automated system of control, more optimal operation of the power units at the Litovskaya GRES will be assured. It is planned to achieve fuel savings of approximately 25,000 tons by way of the extensive introduction of organizational-technical measures and progressive experience at republic electric power stations. Speakers, chief the Main Production Administration of Power and Electrification Yu. Nekroshas and others, emphasized that there are still many unused reserves in the power workers' performance. It is necessary to considerably increase the efficiency of fuel utilization and improve the utilization of electric power installations. Malfunctions are not uncommon in the power networks and they cause serious losses in industry and agriculture. R. Songayla, chairman of the Lithuanian SSR Council of Ministers spoke at the meeting. The power workers socialist obligations for 1982 were adopted. [Text] [Vil'nyus SOVETSKAYA LITVA in Russian 14 Jan 82 p 1] 5454

KIEV TETS-6 START-UP--Kiev, 5 Jan--A bright flame burst forth today in the firebox of the huge boiler of the first power unit of Kiev TETs-6. The capital's biggest new plant is going into operation. Just this year the station is putting out 1.4 billion kilowatt-hours of electricity and about 1.2 million gigacalories of heat, which will considerably improve the supply for the central part of the city and for the new microrayons situated on both banks of the Dnepr. The equipment of the highly automated and mechanized enterprise which combines the production of electric power and heat will make it possible to manage fuel resources more economically. The station's decontaminating systems protect the atmosphere and water sources from hazardous discharges. The environment will get a considerable boost, too, from the elimination of dozens of small boiler houses, now no longer needed. The second unit will go into operation in 1983. There will be four power units in the fully completed TETs, the largest one in the republic. The electricity, heat and hot water they produce will be enough for an entire city with a million population. [By O. Popova] [Text] [Kiev PRAVDA UKRAINY in Russian 6 Jan 82 p 1] 5454

TRANSCAUCASUS TRANSMISSION LINE--Ordzhonikidze--The first section of the Ordzhonikidze-Chirkeyskaya GES Transcaucasus High-Voltage Electric Power Transmission Line was today put under industrial load. The new high-tension line, over 200 kilometers long, will enable a fuller utilization of the hydro resources of the Sulakskiy GES cascade. [Text] [Moscow TRUD in Russian 1 Dec 81 p 1] 5454

AZERBAIJAN GRES START-UP--The first power unit of the Azerbaijan GRES has been put in operation. Its capacity is 330,000 kilowatts. With four such units, the new station is due to become the most powerful thermal station in the Caucasus. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

DNEPROGES OUTPUT--The collective of Dneproges imeni V. I. Lenin has met its year's obligations for electric power production. The nation has received 5 billion kilowatt-hours. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

BELOYARSK FAST BREEDER REACTOR--The BN-600 power unit at the Beloyarsk Nuclear Electric Power Station has been brought up to designed capacity. The capacity of this, the world's largest fast breeder reactor, is 600,000 kilowatts. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

YAKUTSK GRES--The seventh turbine of the Yakutskaya GRES, which operates on natural gas, has been put under industrial load. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

SHEVCHENKO-KARAZHANBAS TRANSMISSION LINE--The 200-kilometer-long second line of the Shevchenko-Karazhanbas LEP-220 has been activated. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

NOVO-ZIMINSKAYA TETs--Zima, Irkutskaya Oblast--The second power unit of the Novo-Ziminskaya TETs has gone on stream. The heat which the station produces goes to the shops of the Ziminskiy Chemical Plant, which is under construction, and to the residences of the settlement of Sayansk. The station is incorporated in the Unified Power System of Siberia. [Text] [Moscow IZVESTIYA in Russian 6 Jan 82 p 2] 5454

RYAZAN GRES--Novomichurinsk, Ryazanskaya Oblast--The sixth power unit of Ryazanskaya GRES, capacity 800,000 kilowatts, has been put under industrial load. Due to the fact that construction and installation were done simultaneously, the standard terms were cut in half. The generator of the huge unit is water cooled, which gives the machine a higher efficiency. [Text] [Moscow IZVESTIYA in Russian 7 Jan 82 p 1] 5454

HELICOPTERS STRING POWER LINES--Taksimo, Buryatskaya ASSR--Rotary wing machines have again confirmed their universality. East Siberian pilots have "taught" MI-8 helicopters to pay out wires along the masts of a transmission line on the Western Sector of the Baykal-Amur Mainline. Now one brigade handles this laborious operation in a matter of hours, instead of seven brigades taking more than a day. The innovation has enabled the linemen to run way ahead of schedule. Power from the Ust'-Ilimskaya GES is now going to numerous points on the Western Sector of the Baykal-Amur Mainline from Lena-Vostochnaya to the Severomuyskiy Tunnel. The hour is near when the current will flow to the builders of the first bridges across the Vitim. It was here, on the approaches to the famous Ugryum River, that the TASS correspondent saw the helicopters engaged in the new business. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Jan 82 p 2] 5454

HELICOPTERS DO TAYGA LINE--Komsomol'sk-na-Amure, 28 Dec--Powerful electric current from the Zeyskaya GES has been directed here out of Khabarovsk via a new transmission line. The electric power builders overcame nearly 400 kilometers of impenetrable taiga thicket in record time. It took 1.5 years instead of the 37 months the standards specify. The new line has connected the rapidly developing Amur River region with the Unified Power System of the Far East. More than half the route passed through swampland. Floating foundations were used extensively. Helicopters installed masts and paid out wire. Other technical innovations also speeded up the construction of the line. [By Yu. Zhigaylov, PRAVDA correspondent] [Text] [Moscow PRAVDA in Russian 29 Dec 81 p 2] 5454

KONAKOVSKAYA GRES--The GRES collective has obligated itself on the basis of better utilization of the power units' installed capacity, improved operation of them and better repair service on them, and the extensive introduction of progressive technique, to guarantee the daily uninterrupted and high-efficiency operation of the station and to upgrade the reliability of the power supply to consumers. On the occasion of the 60th anniversary of the founding of the USSR it is planned to save 18,000 tons of conventional fuel over the year's goal and to produce more than

50 million kilowatt-hours of electric power on the fuel resources saved. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 5454

SURGUTSKAYA GRES UNIT 13--Surgut, Tyumenskaya Oblast, 28 Dec--The 13th power generating unit of the Surgutskaya GRES put out the rated current today. The station runs on casing-head gas. The collective of this vital project has completed fulfillment of the program for getting electric power capacity into service a year ahead of time. The speed-up was achieved through the extensive use of the experience gained during construction of the first power generating units. The station is built of high-efficiency materials and light-weight structures which are factory ready to a high degree. This made it possible to reduce the amount of work involved in the assembly operations. [By V. Zhilyakov, TASS correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Dec 81 p 1] 5454

330-METER GRES STACK--Zugres, Donetskaya Oblast--A. Sukhin's crew has come down to earth from its work site which appeared to be above the clouds. The crew today finished installing the 330-meter stack of the Zuyevskaya GRES-2. Not a single brick was laid in the huge structure. Silicon concrete, long-lived and resistant to aggressive media was used here. Pipe layer A. Sukhin and his comrades had to be trained for the new profession of installers. They assembled panels into consolidated units and set them into position, which sharply cut down on the labor input. The accelerated construction of the stack, which is to serve eight power generating units, is making for start-up of the station's first unit ahead of schedule. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 Dec 81 p 1] 5454

KURPSAYSKAYA GES--Frunze--The second unit of the Kurpsayskaya GES in Kirgizia has gone on stream. The power-producing river has infused twice more capacity into the united Central Asian Power System. Below the top of the dam from the headrace side one can see a scarlet banner bearing in large letters the inscription "60th anniversary of the founding of the USSR--60 vital weeks!" One of these weeks will go down in the chronicle of the construction project in red: second unit start-up ahead of schedule--an important event in the life of the entire collective of the Naryngidroenergostroy administration. Much is being said today about the Kurpsay speed-up. The secret lies, above all, in the people. The unit was put together in record time. This was achieved through maximum combining of assembly operations. The collective of the Spetsgidroelektromontazh administration gave up the traditional methods of installing in sequence and introduced the so-called parallel assembly of elements. [By P. Laptev, SOTSIALISTICHESKAYA INDUSTRIYA correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 Dec 81 p 1]

KURPSAYSKAYA GES SECOND SECTION--It's right hot in the valleys of southern Kirghizia but icy winds rage in the mountains. They are especially strong in the Kurpsay corrider where the course of the deep mountain river Naryn is interrupted by the dam of a hydroelectric power station. The Kurpsayskaya GES is the locale of a massive feat of labor by the republic's builders. The first 200,000-kilowatt unit made its first working revolutions on the eve of the 26th CPSU Congress. And here's the new labor conquest: The station's second 200,000-kilowatt unit has gone on stream. The start-up of the complex machinery has confirmed the high skill of its installers, specialists of the Central Asian installation administration, Spetsgidromontazh. The second unit has put its first millions of kilowatt-hours of low-cost electricity into the Central Asian Power System. All components are running normally. Kurpsayskaya GES is the fourth station of the great Naryn cascade. Some 20 hydroelectric stations will be built here. It is noteworthy that the builders are stepping up the work tempo on each succeeding station. /B. Prokhorov/ /Text/ /Moscow IZVESTIYA in Russian 3 Jan 82 p 2/ 5454

VORKUTA COKING COAL--The miners of Vorgashorskaya Mine in the Vorkuta Basin have put out the five millionth ton of coking coal since the beginning of the year. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

SOUTH YAKUTIA COAL--Two million tons of South Yakutian coal has been shipped to industrial centers of Siberia and the Far East. The Neryungrinskiy Strip Mine is the first of the major enterprises that have gone up in the zone of the Baykal-Amur Mainline to start repaying the nation the resources spent on its construction. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

TOMSK OIL OUTPUT--Tomskneft' Association oil workers have recovered the ten millionth ton of raw material since the beginning of the year. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 2] 5454

CSO: 1822/78

UDC 622.7:658.27:658.589 "Antratsitugleobogashcheniye"

## WAYS TO IMPROVE ENRICHMENT PLANT OUTPUT OFFERED

Kiev UGOL' UKRAINY in Russian No 12, Dec 81 pp 2-4

[Article by I. P. Zhukov, general director of the association: "Technical Level of Enterprises of the Association of Anthracite-Coal-Enrichment and Measures to Improve It"]

[Text] The decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Accelerate Technical Re-equipping of Mines of the USSR Ministry of the Coal Industry" outlines measures for re-equipping of mines based on new production equipment, for reduction in outlays of manual labor and guarantee of increase in coal extraction mainly because of an improvement in labor productivity. But questions of creating and introducing highly efficient sets of machines, and reducing labor outlays currently also disturb the coal-enrichers since the quality of the manufactured product depends on the technical level of production at enrichment plants.

The development of the coal industry at the current stage which is characterized by comprehensive mechanization of extraction with primary use of narrow-holding equipment, complicated mining-geological conditions and involvement of high-ash beds in operation, determine the trend of annual deterioration in quality of the extracted coals. The importance of anthracites in the national economy has recently risen. New sectors have been organized and are developing which require high-quality anthracite concentrates (agglomeration of iron ore, production of thermo-anthracite electrodes, abrasive materials and other products). The technical level and technological efficiency of enrichment of anthracites is significantly lower than coking coals. The equipment and technology for enriching anthracites at plants with depth of enrichment 6 mm do not guarantee fulfillment of the rising requirements for the quality of the low classes. In order to satisfy the national economic need for important types of coal products, it is necessary to eliminate this lagging in the shortest time, bringing the equipment and technology for anthracite enrichment into complete correspondence with conditions of their extraction and consumption.

The decisions of the 26th CPSU Congress stress the need and importance for improving the efficiency of production, improving the quality of commercial-grade products, reducing the losses of fuel with enrichment wastes, and diminishing the level of manual labor. The successful solution of the set task depends on the rates of increase in the technical level of production.

The association "Antratsitugleobogashcheniye" includes nine active enrichment plants with total output for anthracite reprocessing of 17.7 million T per year and 2 newly constructed plants. Considerable work was done in the 9th and 10th Five-Year Plans to improve the technical level and to re-equip the enrichment plants with more advanced types of equipment. Reprocessing of ordinary anthracites in the examined period more than doubled. There was a significant change in the percentage participation of progressive methods of enrichment. Enrichment in heavy media, the most advanced method which guarantees minimum coal losses in the wastes, was used for 3.3 million T of anthracite in 1980 versus 2 million T in 1970, and respectively by jigging 7.6 million T versus 4.2 million T. Flotation whose specific weight has reached roughly 7 percent was used for the first time to enrich finely-granular anthracite sludges.

We note that fuel losses in the enrichment wastes are being systematically reduced. This is indicated by the rise in their ash content from 70.3 percent in 1970 to 73.8 percent in 1980. The ash content in wastes in the first 6 months of 1981 was 75.2 percent. This was guaranteed by the use of new equipment and the leading technology, and by introducing efficient enrichment regimes.

Despite the continual deterioration in the quality of ordinary anthracites and increase in the per-hour load on the production equipment, a slight rise in ash content of the concentrate manufactured by the plants has been observed. Drop in quality of the shipped products for the association is primarily due to the increase in ash content of the nonenriched coal fines during the examined period from 18.9 to 29.7 percent. The constant growth in ash content of the shallow classes and their content in the ordinary coals made it necessary to increase the depth of enrichment. This is associated with the use of more advanced methods and means of dehydration, trapping of sludges and clarification of the sludge waters. In order to enrich low-value high-ash anthracite siftings (class 0-6 mm), the enrichment plant "Yanovskaya" was reconstructed and started up in 1979. The use of advanced equipment and technology made it possible to obtain high-quality small concentrate for agglomeration of iron ore with ash content to 15 percent.

The main trend in increasing the volumes of enrichment of small anthracite classes and improving the technical level of enterprises of the association in the 11th Five-Year Plan is construction and start-up of plants with deep enrichment to 0 mm. It has been planned to introduce the enrichment plants "Dolzhanskaya-Kapital'naya" and No 1/2 "Nagol'chanskiy" with rated output for ordinary coal respectively to 6.8 and 3 million T per year, equipped with advanced machines and equipment, automated systems for controlling production processes (ASU TP).

The production plan of the mining enrichment plant "Dolzhanskaya-Kapital'naya" employs new highly efficient equipment: jigging machines OM-24 for enriching anthracite of size 0.5-13 mm, conical screens GK-1.5 for desludging material before jigging, horizontal filtering centrifuges VG-1320 and disc vacuum-filters "Gornyak" for dehydrating respectively concentrate with size 0-6 mm and flotation concentrate, thickeners S-10 for flocculation of flotation wastes and obtaining clean water within the plant, RKTP and VAK instruments for continuous control of ash content and moisture content of the coal in the stream, etc. Construction of a filter-press division for dehydration of flotation wastes is further stipulated.

A reserve in improving production is reconstruction and technical re-equipping of active enrichment plants. Reconstruction of the mining enrichment plant "Vakhrushevskaya" will be completed in 1981. This stipulates construction of an annex and placement in it of the heavy-medium separator SKV-20 for enriching anthracite of large classes (over 25 mm). Separate enrichment of large and small classes will reduce losses in the wastes, improve efficiency of jigging, and consequently, improve the quality indicators for the enrichment products. Similar work will be done in 1982-1983 at the mining enrichment plant "Partizanskaya." This will reduce fuel losses in the wastes and improve the quality of the coals used for production of thermo-anthracites.

Creative cooperation of the production engineers and workers of Ukrniiugleobogashcheniye plays an enormous role in the technical re-equipping of the enterprises. The introduction of different developments of the institute and the rendering of technical assistance during installation, adjustment and assimilation of new types of equipment promote technical progress in enrichment.

Together with Ukrniiugleobogashcheniye, the association has developed a target comprehensive program for 1981-1985 to improve the technical level of production aimed at improving the technological processes and the equipment of coal enrichment. It is planned in the 11th Five-Year Plan to replace the jigging machines with more advanced ones equipped with valve pulsators, grating-free rotary unloaders and automated system of unloading heavy RSB [expansion unknown] products at the mining enrichment plant "Tsentrosoyuz" (1981), central enrichment plant "Mayak" (1982) and the mining enrichment plant "Tsentral'naya" (1983). In 1981 alone, seven spiral drains of Ukrniiugleobogashcheniye and Donugi design have been introduced in four plants to prevent grinding of large classes of anthracite.

Special attention is focused on the use of new equipment and leading technology in 1981 at the largest central enrichment plant in the association "Komendantskaya" with output of 6 million T per year for ordinary anthracite. The following were introduced here: automated system for maintaining density of the suspension "Ruta," electromagnetic separator of increased output EBM80/170P, improved production plan for enriching the industrial product for jigging machines in heavy-average cyclones, pneumatic drive of jigging machines PPO, automatic regulator for unloading heavy products from jigging machines RSB-4 (six sets), pendulum sampler PM1-10, assemblies and equipment in wear-resistant design, etc.

Significant work is underway to improve the water-sludge plan using conical screens GK and eliminating the circulation of sludge water in the plant system. There will be a significant expansion in the flotation and filtering of the concentrate through replacement of the flotation machines MFU2-63 with MFU-12 machines, vacuum filters "Ukraina-80" with "Gornyak" filters. It is planned to replace the jigging machine OM-18 in the 11th Five-Year Plan with more advanced and productive OM-24. Introduction of ash gages and moisture gages of coal in the stream, and automated system for controlling the processes of flotation and filtering SARF is stipulated for rapid control of the quality of enrichment products. The indicated measures will eliminate the manufacture of intermediate products, increase the output of concentrate with a simultaneous improvement in its quality, reduce the fuel losses in the wastes, stabilize the quality indicators of all processes, and the operation of the plant as a whole.

The problem of halting the discharge of sludge water into the outer treatment works of the plant has important national economic significance. It makes it possible to prevent pollution of the environment, preserve significant ground areas set aside for treatment works and areas for drying, to prevent high operating losses during excavation, delivery and loading of the sludge into railroad cars.

The jigging centrifuges used in the water-sludge plans of the plants with incomplete enrichment cycle (to 6 mm) do not guarantee efficient trapping of finely-granular parts of sludge within the plant or a sufficient degree of clarification of the circulating water. It is therefore necessary to improve the plans after using flotation of sludge, dehydration of the flotation concentrate on disc vacuum-filters, drying of the dehydrated products and treatment of the flotation wastes. It is impossible to introduce the listed processes at the active plants because of the lack of free production areas, and their expansion requires significant capital investments and periods of fulfillment.

Belt vacuum-filters which are characterized by a higher degree of extraction of the solid phase into the precipitate, especially thin classes as compared to the jigging centrifuges have recently been used to trap nonenriched sludge in the plans of the active plants. However the filters have shortcomings which impair operation.

During the experimental operation of the belt vacuum-filter LVF-12 which was introduced at the mining enrichment plant "Tsentrosoyuz" it was found that with a slight deviation from the optimal values of the content of solid phase in the feed and its granulometric composition, there is a drastic fluctuation in the moisture content of the precipitate. This required constant rapid intervention of the service personnel in order to regulate the quantity of slurry entering the hydraulic cyclone. The sludge was not satisfactorily washed of residues and the filtering grid rapidly malfunctioned. Similar shortcomings are inherent to all belt vacuum filters LU and LK with rigidly attached filter cloth.

According to the experience of the mining enrichment plant "Tsentrosoyuz" the vacuum-filter LU4-0.5/8 was updated in 1981 at the mining enrichment plant "Vakhrushevskaya" with expansion of the filtering area to 10 $m^2$. A similar filter has been put into operation at the mining enrichment plant "Khrustal'skaya", and it will be introduced in 1982 at the central enrichment plant "Mayak." Mining enrichment plant "Tsentral'naya" has obtained positive results from testing sectional vacuum-filters (filtering area 10 $m^2$) designed by Ukrniiugleobogashcheniya.

The introduction of filtering units at the plants will permit a 20-25 percent reduction in the discharge of sludge into the outer treatment works, while the content of the solid phase in circulating water will be reduced from 300-400 to 150-200 kg/$m^3$. Output of sludge in the first 6 months of 1981 on the whole for the association was 2.6 percent versus 3 percent in 1980. At the mining enrichment plant "Tsentrosoyuz" where two vacuum-filters are in operation, the sludge output was brought to 0.4-0.5 percent of the total reprocessing.

Improvement in efficient classification of anthracite for size 6 mm promotes reduction in sludge output. Tests are now being done on three GEDP-52 screens with elastic deformable surface at the mining enrichment plant "Partizanskaya." Positive results have been obtained on the efficiency of screening, and at the same time a number of design insufficiencies have been revealed from the viewpoint of reliability. They will be taken into consideration in compiling the technical documents of manufacture of an industrial sample.

An efficient measure for improving commercial products and providing the national economy with high-quality fuel and technological raw material is the development and introduction of a comprehensive system for controlling product quality. The base enterprise for developing the comprehensive system will be the central enrichment plant "Komendantskaya." The plant has set up a coordination-working group, compiled the technical assignment, is working out the standards of the enterprise which will regulate the conducting of organizational, technical and economic measures, and will set the order of action and responsibility for each performer for the work to be done. The development and introduction of a system at all enterprises of the association in 1980-1985 will significantly improve and stabilize the quality indicators for the manufactured product.

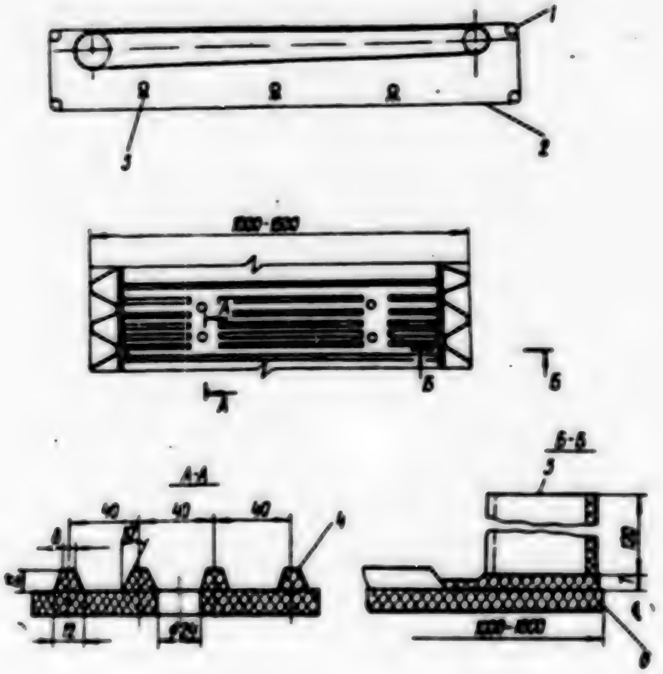

Figure 1. Updated Belt Vacuum-Filter
Key:

| | |
|---|---|
| 1. roller | 4. rubber belt |
| 2. filter cloth | 5. crimped side |
| 3. washing device | 6. belt |

A special place is given to decrease in levels of manual labor based on the introduction of means of mechanization, automated system of maintaining density of the suspension "Ruta," control of processes of flotation and filtering SARF, automated charging of the AZB bins, crushing-milling machines DFM, centralized supply of oxygen to the equipment repair site, etc.

One of the urgent problems for growth of the technical level of production is improvement in the durability of equipment. An agreement has been concluded between the collectives of the Vakhrushi repair-mechanical plant included in the association and the Institute of Electric Arc Welding imeni Paton in which two semi-automatic machines A-765 were introduced in 1981 to restore worn out surfaces of steel parts by the method of powder wire fusion. The introduction of a plasma-fusion A-1756 unit for strengthening the working surfaces of equipment with solid alloys is in the completion stage. It is planned to set up a section for production of monolithic polycrystal silicon carbide (MPK) for lining the surface of parts and equipment operating under conditions of intensive abrasive wear.

The fulfillment of the planned measures, start-up and assimilation by the newly constructed plants of the rated production facilities will significant improve the technical level of the enterprises, and significantly increase participation in enrichment of advanced methods. The percentage of enrichment in heavy media will rise in 1981-1985 from 18.5 to 23.6 percent, jigging from 43.2 to 45.7 percent, and flotation from 7 to 13 percent. The extent of coverage of ordinary anthracites by all types of enrichment will exceed 82 percent versus 69 percent in 1980, i.e., the manufacture of nonenriched siftings and sludge will be reduced from 31 to 18 percent.

COPYRIGHT: Izdatel'stvo "Tekhnika" "Ugol' Ukrainy", 1981

9035
CSO: 1822/102

FUELS

UDC 622.648+621.643

## HYDRAULIC PIPELINE TRANSPORT OF COAL SUGGESTED

Kiev UGOL' UKRAINY in Russian No 12, Dec 81 pp 29-30

[Article by Yu. G. Svitlyy, candidate of technical sciences, "Ukrniigidrougol'" and A. A, Krut', engineer, Ukrainian SSR Ministry of the Coal Industry: "Outlook for Development of Pipeline Transport of Coal"]

[Text] The question of creating a mainhydraulic transporting system acquires special urgency in our country because of the need to move large volumes of coal from the eastern regions to cover the fuel shortage in the European sector, West Siberia and the Urals. A specialized type of transport, hydraulic pipeline, is designed to transport to one side the freight whose commercial value does not diminish from lengthy contact with water. This significantly restricts the area of its application. At the same time, hydraulic transport has the following advantages as compared to other types of transport: insignificant periods of construction and the possibility of laying a pipeline on the shortest route, large throughput with continual process of transporting, and the possibility of complete automation of all the production processes, minimum loss of product, independence of the season and weather conditions. In addition, hydraulic transport satisfies to the greatest measure the requirements of environmental protection.

Analysis of the experience of creating and operating active hydraulic transport systems, as well as scientific research and planning developments indicate that in constructing pipelines, the relative outlays will be roughly 1.5-fold lower than in the construction of a new railroad, 5.5-fold fewer workers are required, and 12-fold lower service personnel to operate, and the metal conservation reaches 25 percent.

The high specific weight of expenditures for starting-completing operations in the total sums of outlays for construction and operation of hydraulic transport systems determines the conditions for their greatest efficiency. The main hydraulic transport systems (MHTS) are becoming competitive in relation to other types of transport with productivity over 10 million T per year and length of over 300 km. Powerful main hydraulic transport systems which transfer fuel thousands of kilometers in an east-west direction must become a part of the unified transport network of the country. The planning organizations of the USSR Ministry of the Coal Industry, USSR Ministry of Power and Electrification and the USSR Ministry of Construction of Oil and Gas Industry Enterprises have made a technical draft of an experimental-industrial pipeline from the hydraulic mine "Inskaya" (Belovo in the Kemerovskaya Oblast) to the Novosibirsk TETs-5 with length of 250 km and annual output to

4 million T of coal. The construction of this pipeline is viewed as the initial stage of work to create a main hydraulic transport system Kuzbass-Ural on which up to 25 million T of coal per year will be transported a distance of 2000 km. According to the calculations made in the TEO [fuel and energy section], the annual economic effect of creating this system will be R 240 million.

The MHTS can be a transportation vehicle which links the fuel supplier and the consumer. In this case, it is a component of the regional fuel-energy complex which encompasses the entire production cycle of extraction-transport-consumption, and can replace low-efficiency short-range railroad shipments, free the lines and rolling stock of the MPS [USSR Ministry of Communications] for other national freight.

The creation of the MHTS is necessary for such large industrial regions as the Donbass, where the reserves for increasing the throughput of the railroad junctions and sections of the Donetsk railroad have been practically exhausted. Its further development is associated with additional capital investments for the construction of second, and in a number of cases, third lines. Within the Donetsk railroad, up to 23 million T of coal per year are shipped short distances. This is inefficient because of the inefficient use of the rolling stock, increase in the specific weight of loading-unloading operations, disruption in the routing conditions, etc.

The creation of intraregional hydraulic transport systems for shipping coal from mines to enrichment plants and thermal power plants will successfully develop a network of transport in the Donbass, significantly reduce the volume of short-range railroad shipments, free up a large part of the rolling stock and especially scarce car fleets. When fuel and energy complexes are created, conditions will be guaranteed for the use of fuel resources based on intensive methods of management and accelerated scientific and technical progress. One of these complexes can be created on the basis of the Novomoskovskiy fields. The coal consumer would become the Chigirin GRES which is under construction. In order to supply it with fuel, it is necessary to move up to 9 million T of energy coal per year on the main pipeline extending 200 km. The expediency of hydraulic transport of coal in this case is stressed by a possibility of its desalinization on the way.

Hydraulic pipeline transport can also be used to move coal comparatively short distances. Many years of experience of operating pipelines linking the hydraulic mine "Inskaya" with the Belovo GRES and "Yubileynaya" with the Kuznetsk metallurgical combine indicates the expediency of creating industrial hydraulic transport systems of length 10-15 km on which coal can be transferred from mines to enrichment plants. The net cost of transporting 1 T of coal 1 km on the Kuznetsk pipeline is 1.07-1.88 kopecks lower than shipping on the railroad.

According to preliminary calculations, when hydraulic transport systems are created to move coal from mines to enrichment plants, the cost of shipping 1 T of mining mass on the railroad will be 91 kopecks, by hydraulic transport without consideration for reconstruction of enrichment plants 43 kopecks, with partial reconstruction 59 kopecks, and with complete reconstruction 74 kopecks. Hydraulic transport systems also serve as an effective means of moving wastes of the coal and other productions to the sites of storage or recovery (for example, to laying complexes of the mines). This is indicated by the many years of positive experience of working the rock hydraulic complexes of mine No 6 "Kapital'naya" of the Donetskugol' association and at hydraulic mine No 105 of the Selidovugol' association. Hydraulic transport systems of this quality can become the link in creation of waste-free production.

The experience of operating the existing hydraulic transport systems, planned development and diversity of the conditions of their use advance a number of tasks which are being successfully solved by the Ukrniigidrougol' and a number of scientific research and planning design organizations. The importance of the task of creating main hydraulic transport systems and improving industrial hydraulic transport was stressed by the all-union scientific and technical conference "Pipeline Hydraulic Transport of Solid Materials" which took place in August 1981 in Moscow.

COPYRIGHT: Izdatel'stvo "Tekhnika" "Ugol' Ukrainy", 1981

9035
CSO: 1822/102

## COAL PRODUCTION REVIEWED, HIGHER OUTPUT APPEALED FOR

Moscow UGOL' in Russian No 1, Jan 82 pp 4-6

[Article: More Coal for the Country"]

> [Text] The Soviet nation has entered a new five-year plan with a feeling of optimism and confidence of its strength. It is deeply convinced that the great and complicated tasks of communist construction set by the congress will be successfully resolved.
>
> L. I. Brezhnev from a speech at the November (1981) Plenum of the CPSU Central Committee.

The workers of the coal industry are entering the second year of the 11th Five-Year Plan with an expanded program of action outlined in the decrees of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Accelerate Technical Re-equipping of the Mines of the USSR Ministry of the Coal Industry," "On Additional Measures to Accelerate the Development of Coal Extraction by the Open Method in 1981-1990," and "On Improving the Tariff Rates and Official Salaries and Improving the Organizations of Wages of Workers and Clerical Workers of the Coal (Shale) Industry and Mining Construction."

The economic and social importance of these decrees is inestimable. They stipulate the implementation of a set of measures for the further development of the sector, and improvement in its national economic efficiency. The decrees reflect the concern of the party and government for the growth in welfare of the workers of the coal industry, facilitation of their working conditions, and guarantee of work safety at the mines and open pits.

The task set before the coal industry by the 26th CPSU Congress and the decrees of the party and government require concentration of the efforts of all the workers on searching for internal reserves and actuating them, the most rapid elimination of shortcomings which are present in the work of the enterprises, associations, institutes and other organizations of the sector.

The coal industry has reduced the rates of its development and has been operating intensively in recent years. The demands of the national economy for solid fuel are not being completely satisfied. This occurs because of the lagging in capital construction, the slow development of the active facilities, shortcomings in the creation and production of mining equipment, weak organization of labor and production, and violations of the planned discipline. A shortage of workers also has an effect.

The chief decisive condition for improving the work of the coal industry is acceleration of technical re-equipping of the mines. Today, over one-third of underground coal extraction is provided by mines with annual output of only 1.5 million T, and at such mines as "Tentekskaya" in Karaganda, imeni A. G. Stakhanov in Donbass, "Vorgashorskaya" in the Pechora basin and "Raspadskaya" in Kuzbass, from 3 to 7.5 million T of coal per year are extracted.

The level of comprehensive mechanization of stoping work for the sector as a whole has been brought to 67 percent, and making of mine shafts with the use of combines and loading machines has been brought to 88 percent. The shipment of coal on inclined shafts has been completely conveyerized. More advanced systems of dust and gas protection have been created, and a number of measures have been taken to improve industrial hygiene.

At the same time, as indicated in the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Accelerate Technical Re-equipping of Mines of the Ministry of the USSR Coal Industry," there are significant shortcomings in the work of technical re-equipping of the coal mines. Lagging has been permitted in the reconstruction of the active enterprises, the preparation of new levels and the development of a front of stoping operations. Scientific research and planning-design institutes of the sector are delaying the schedules for creating new mining equipment, especially for complicated and severe mining-geological conditions. The level of use of manual labor is diminishing slowly.

The most important problem without whose solution the achievement of a high technical equipping of the mines and fulfillment of assignments to improve the efficient use of equipment are unthinkable is improvement in the mining management. Progressive technological plans have been developed and are being introduced in the sector, the volumes of drilling wells of large diameter for mine ventilation have risen, and the volumes of strengthening the shafts with metal timbering have increased.

The attention given to mine reconstruction, the construction of shafts and the preparation of new levels has been weakened in recent years however, In the 10th Five-Year Plan, the plans for construction-installation work for reconstruction of mines were fulfilled for the Ukrainian Donbass only by 84 percent, and for the Karaganda basin by 89 percent. The resources allocated for preparation of new levels in the Kuzbass are not being sufficiently assimilated.

It remains in the 11th Five-Year Plan to implement important measures to regulate mining management. In the Donbass alone, 285 new levels must be prepared, 150 vertical shafts and large-diameter wells must be made. Whereas in the Ninth and 10th Five-Year Plans, primary attention in improving the technical level of the mines was focused on more complete quantitative saturation of the longwalls with comprehensive mechanization equipment, now the efforts of the engineering-technical workers, material-technical resources and scientific search must be primarily aimed at improving mining management and better use of the available equipment. The main trend is improving the efficient operation of the longwalls which are equipped with mechanized complexes, and further development of the movement of the collectives of the brigades and sections which are extracting no less than 1,000 T of coal per day from one comprehensively mechanized face. The brigades of the leading workers are currently yielding only 40 percent of all the coal extracted by the underground method.

Unfortunately, not all the longwalls equipped with complexes are operating with high productivity. The set assignments are not being fulfilled in almost half of them. The main reason for this is the accident rate in the mechanized complexes and the transporting vehicles on the shafts adjacent to the longwall. Correct operation and proper use of the complexes is obstructed by untimely and poor quality preparation of the stoping faces for operation.

In addition to implementing measures to improve quality and reliability of the machines, it is necessary to achieve complete provision of the brigades with skilled workers, to select and to appoint energetic and knowledgeable heads of the sections and brigade foremen, to observe the schedules for planned-preventive inspection and repair of the equipment, as well as the set schedules for assembly and disassembly of the complexes. The chief engineers and the chief mechanics of the mines and associations, in addition to monitoring the fulfillment of the operating regulations must monthly analyze the condition of the comprehensively mechanized longwalls and take the necessary measures to improve their operation.

It remains to increase the coal extraction by the complexes in 1982 by roughly 12 million T, and bring it to 280 million T. In this case, the extraction on the thin sloping beds must increase by 6-7 million, and on the steep by 1.5 million T.

The stable operation of the sector depends a lot on the technical level and accelerated rates of making the preparatory shafts. It is necessary to eliminate serious shortcomings in organizing the preparatory operations which cause a delay in coal extraction. One of them is the lack in many associations and at the mines of specialized brigades for installing operations, delivery of materials and equipment, as well as diversion of a large number of tunnelers to other work.

Mechanization of heavy and labor-intensive work in making preparatory shafts is going at slow rates. As a consequence, the specific weight of manual labor is higher here than the average for the sector.

It is necessary to increase the shipment of tunneling equipment by 30-35 percent in the 11th Five-Year Plan in order to improve the technical level of making shafts. The most serious attention should be focused on supplying the tunnelers with low mechanization equipment, especially lifting and transporting. The repair enterprises of production associations must make a significant part of these attachments.

Equipping of the mining enterprises with complicated and highly productive equipment requires a review of the current practice of planning the number, selection, training, forms of material interest of the workers of the energy-mechanical services, and improving the role of the chief mechanics and power engineers. It is also necessary to strengthen the services which provide the technical maintenance, adjustment and major repair of equipment.

A decisive condition for accelerating rates of technical progress at the mines is advanced development of coal machine construction. The output of machine construction plant products in the 10th Five-Year Plan rose by 20 percent. The production of complexes, stoping and tunneling combines, conveyers, and spare parts for the mining equipment increased. Over 200 names of new machines, instruments and apparatus were assimilated. New shops were introduced at many plants. At the same time, the machine builders have still not completely provided for the needs of the mines for the necessary equipment. Many claims are made against the quality of the machines, there are complaints of incomplete shipments, and especially unsatisfactory supply of spare parts.

Coal machine construction in the 11th Five-Year Plan must increase the output of equipment of 18.6 percent, including mechanized complexes by 24 percent, tunneling combines by 27 percent, belt conveyers by 30.7 percent, cars by 36 percent, spare parts for mining equipment by 36.9 percent.

The machine builders must improve the use of the available production facilities and the labor resources. These tasks can be solved by further reduction in the turnover of personnel, loss of work time, and the introduction of advanced forms of organization and payment of labor.

Further development of the most effective and economical open method of coal extraction is primary in guaranteeing technical progress in the sector. The decree of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures to Accelerate the Development of Coal Extracting by the Open Method in 1981-1990" provides a new impetus for accelerating open pits of coal fields. In 1980, the open method was used to extract 269 million T of coal. This is 104 million T, or 63 percent more than in 1970. This method is responsible for 38 percent of the total coal extraction in the country. There are currently 73 coal pits operating in the sector with total production output of 270 million T per year. Among them are such large pits as "Bogatyr'" with output of 50 million T of coal per year, "Tsentral'nyy" with 22 million T, "Irsha-Borodinskiy" with 20 million T, "Nazarovskiy" with 13 million T, and "Azeyskiy" with 10 million T.

A lot of work was done during the 10th Five-Year Plan for technical re-equipping of the open pits, their reconstruction and updating. This increased coal extraction in the pits by 35 percent and the volume of stripping operations by the same amount. The average monthly output of labor of the worker for extraction increased in this case by 40 percent.

The achievements in this area are still insufficient, however, and the available reserves for increasing coal extraction by the open method are not completely utilized. Moreover, the rates of its increase have been slowed down in recent years, and lagging in the volumes of stripping operations is significant. The use of mining and transport equipment has deteriorated.

The party and government placed before the coal workers the task of drastically improving the rates of increase in new facilities for coal extraction by the open method. It is necessary to extract 315 million T of coal at the open pits in 1985, and 390-400 T of coal in 1990, and to guarantee the start-up of new facilities in a volume of 68.6 million T during the five-year plan. Coal extraction by the open method must reach 273.5 million T already in 1982.

Great tasks face the association "Kemerovougol'" where coal extraction on open pits must increase in the 11th Five-Year Plan to 54 million T per year. Work to build new high-output pits at Taldinskiy, Uryupsko-Karakanskiy and Bachatskiy fields must be expanded for this goal, and operation of active enterprises must be improved.

The Yuzhno-Yakutsk, Ekibastuz, Kansko-Achinsk fuel and energy complexes must develop at more rapid rates. A significant numberof powerful excavators and bulldozers, heavy-freight dump trucks, drilling machines and other equipment have been allocated for these basins.

There is an especially lot of work facing the builders of the Ekibastuz fuel and energy complex where the coal miners must assimilate R 380 million of capital investments and guarantee start-up of new facilities in the "Vostochnyy" pit in the 11th Five-Year Plan. Coal extraction here will rise by 6.2 percent in 1982.

The implementation of additional measures to accelerate the development of the open pit method of coal extraction is one of the most important national economic tasks to provide fuel for the needs of the developing heat and power engineering.

Acceleration in the rates of scientific and technical progress in the coal industry depends a lot on further improvement in the results and efficient operation of the scientific and design organizations of the sector.

There are many good examples of fruitful work of the institutes, for example PNIUI [Moscow Region Scientific Research Coal Institute], IOTT [expansion unknown] and others to create and introduce new equipment, improve technology, and for creative cooperation with the enterprises. At the same time, the output of the sector science is still insufficient. Scientific research and design organizations have not ensured with their developments a neutralization of the deteriorating operating conditions of the sector which have been especially acute in recent years.

It is necessary to review the subject matter of the institutes, to bring it closer to the urgent needs of the sector, and to eliminate individual subdivisions or reconstruct their operations. The institutes and associations of the sector need to aim their scientific potential, financial and material resources at realizing the target comprehensive programs and problems, all possible reduction in the periods for performing the planned work, increasing its efficiency, and accelerating the introduction of scientific and technical achievements into production.

The leaders of the associations, enterprises, construction sites and organizations of the USSR Ministry of the Coal Industry must deeply analyze the results of their work in 1981, formulate and implement organizational-technical measures to overcome the permitted lagging, to mobilize reserves for improvement in work, and to involve all the branch workers in this.

It is necessary for this purpose to completely utilize the mobilizing significance of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Tariff Rates and Official Salaries and Perfecting the Organization of Wages of the Workers and Clerical Workers of the Coal (Shale) Industry and Mining Construction." It is necessary in this case to start from the instructions of Comrade L. I. Brezhnev that our system of material and moral stimuli must always and universally guarantee a correct evaluation of the labor contribution of each, to encourage in all possible ways conscientious workers, not to allow idlers and bad workers any loopholes for a good life for worthless work.

A lot of work has been previously done in this area in the coal industry. For workers and mining foremen engaged in underground work with severe and especially hazardous working conditions, a 30-hour work week was set. The tariff rates for workers of the basic occupations was increased by 10 percent, the sizes of the rewards for long service in underground work were enlarged, and also the majority of workers and engineering-technical workers of the mining surface, open pits and production transportation. Certain coal basins increased the regional coefficients. The maximum size of the old-age pension was brought to R 140-160 depending on the length of service. All of this solved a number of social problems associated with more correct distribution of wages among the individual categories of workers, elevation of the material interest in the results of work, and guarantee of the involvement in work of young people in the coal industry.

A new increase in tariff rates and salaries is planned in the Donetsk, Kuznetsk, Karaganda, Ekibastuz, and Pechora coal basins in the first quarter of 1982. New tariff rates and official salaries will be reviewed in the 1983 plan in other coal regions.

In addition to increasing wages, its stimulating role will be intensified for improving the efficiencyof production and the quality of work. This will be done by increasing the piece-rates, payment for each hour of actual work with a simultaneous improvement in standardization of labor.

More advanced grouping of the enterprises and their structural subdivisions for the level of wages should be used in setting the salaries of the managing and engineering-technical workers so that stimulation of growth in the volumes of production, assimilation of output and improvement in efficiency of managerial labor are strengthened.

In addition to improving the wages of the workers of the coal industry, the decree stipulates a halting to the establishment of additional assignments for coal extraction. The transition to work without additional assignments requires serious and thorough preparation, improvement in planning, and more complete utilization of the basic funds, working time and material resources. It is necessary to strengthen the responsibility at all levels for fulfilling the plan, elevating labor and production discipline, and the level of labor organization.

An important condition for improving the efficiency of coal production is a further development of socialist competition, a powerful lever for raising the creative activity of the masses. The miners have always been in the first ranks of the competitors. Many of their valuable initiatives have been approved by the CPSU Central Committee, and among them, the initiative of the collectives from the mine imeni Kostenko of the association "Karagandaugol'," imeni 50th anniversary of the USSR of the association "Gukovugol'," Nagornaya" of the association "Gidrougol'" and the "Mayskaya" of the association "Rostovugol'." These collectives have received greetings of General Secretary of the CPSU Central Committee,Chairman of the Presidium of the USSR Supreme Soviet,Comrade L. I. Brezhnev with wishes for new success in work.

The decrees adopted by the CPSU Central Committee and the USSR Council of Ministers were warmly approved by all the miners. Many labor collectives adopted increased socialist commitments, striving by intensified labor to respond to the concern of party and the government.

The workers of the coal industry are faced in 1982 with great and complicated tasks for a drastic increase in coal extraction, acceleration in the rates of capital construction, increase in output and improvement in the quality of the mining equipment and spare parts, further expansion in coal enrichment, and supply of high-quality fuel to the consumers. In order to overcome lagging in the sector, it is necessary to persistently struggle for a better use of the production facilities and mining equipment, improvement in the level of organization of production and labor, strengthening in labor and production discipline, broader spread of the leading experience, and more active development of socialist competition.

Let the new 1982 year become a turning point for the coal industry in a decisive improvement in all work and elevation of it to a higher level. The glorious mining traditions are a guarantee of this: work in the Stakhanovite manner, intensively. There is no doubt that in the second year of the 11th Five-Year Plan, all the workers of the sector, worthily continuing and multiplying these traditions will display the maximum energy and persistence in order to fulfill with honor the tasks facing them and to bring the coal industry to the leading frontiers.

Happy New Year dear comrades!

COPYRIGHT: Izdatel'stvo "Nedra" "Ugol'" 1982

9035
CSO: 1822/103

# DEVELOPMENT OF KARSHI GAS-CHEMICAL COMPLEX FORGES AHEAD

Tashkent EKONOMIKA I ZHIZN' in Russian No 12, Dec 81 pp 54-57

[Article by Yu. Kruzhilin: "The Year of Kashkadar'inskiy Gas"]

[Text] The discovery of the richest gas fields, inexpensive, economical and efficient fuel in the Karshi steppe is a real feat of the Uzbekistan geologists. A powerful gas-chemical complex is being created in the Kashkadar'inskaya Oblast in order to prepare this gas for transporting to millions of apartments and to hundreds of boiler houses and power plants.

Its raw material base is located in two regions located in the environs of Karshi. We will first set out for Shurtan.

## In the Shurtan Hills

The arrow on the manometer reads 350 atmospheres. The inestimable wealth of this kray, the gas of the Shurtan field, bursts from the ground at this frightening pressure. The main fuel and power base of Uzbekistan is now shifting to here, in the vicinity of Karshi, from central Kyzylkumy. Gas extraction is diminishing at the Gazli field which has been in operation for over 20 years, while here the geologists have already discovered reserves of almost half a trillion cubic meters. And the successful exploration is continuing.

We arrived here at a time when work was underway at the active Shurtan field to double gas extraction this year. Fields are now active here which annually yield 4 billion cubic meters. All of this fuel is sent on the 400-kilometer pipeline that supplies the largest power plant in Central Asia, the Syrdar'ya GRES. The operation of the Shurtan-Shirin gas pipeline frees up several railroad cars of mazut every day.

Soon the annual extraction of Shurtan gas will reach 8 billion cubic meters. A lot of work needs to be done on the vast spaces of the field to achieve this. First of all, 10 wells with depth of 2-3 km each have to be drilled here. Then pipelines have to be laid from them to the so-called unit of preliminary gas preparation. Here mechanical admixtures (stones, grit) are removed from the extracted fuel and the valuable liquid product, condensate is separated. Then the gas is sent on pipes to other apparatus where it is purified of sulfur, dried, brought to the necessary temperature and pressure. After this it is sent to the consumers.

All of this work is being done at accelerated rates. Well drilling has already been completed. The brigades of the association "Uzbekburgaz" finished this much earlier than the planned schedules.

In addition to the powerful active complex of main structures of the Shurtan-Syrdar'ya GRES gas pipeline, yet another such plant for gas purification has been built. The workers are finishing the assembly of the units: absorbers of the sulfur contained in the gas; and others in which the steam precipitates out as dew; and others where the necessary chemicals will be prepared for reactions.

The most complicated part of the work is connecting the already installed equipment by pipes. The gas industry is primarily pipes. The welder is the main figure at the construction of gas facilities.

The certified welders of "Sredazneftegazmontazh" who connected all the pipes at the Shurtan field have brilliantly coped with their work. This was not easy. The pipe on which the gas comes from the wells is as thick as a wall and the quality of the steel is like a cannon barrel for it must withstand 350 atmospheres! High skill and strict technological discipline are required to weld these pipes. Monitoring using precision instruments, and then months of operating the equipment did not reveal a single defect. Not a single joint shuddered under the high pressure.

## Tomorrow

Everything that has been done here is only the beginning, although it is impressive. The gas-chemistry of Shurtan will be complicated and multiple-sector. The gas here has a complicated composition. Only one component is extracted from it now, condensate, a valuable fuel. The plant will next extract ethane which will supply the chemical enterprises of Navoi with the raw material for production of plastics. In addition, propane-butane is separated from the Shurtan gas. It can fuel cars and tanks for supplying apartments.

After giving up so many useful components, the Shurtan gas nevertheless remains an efficient fuel. There is enough not only for the Syrdar'ya GRES. Construction is already beginning of a new main on which the gas will go to the boilers of the Tashkent GRES. Other major consumers, the Akhangaran and Bekabad cement kombinats, will also receive it.

The participants of work at the Shurtan gas-chemical complex mainly work accurately and harmoniously. The USSR Ministries of the Chemical and Gas Industries have issued a joint order which defines the outlook, specific schedules and mutual duties of the construction site collectives.

The majority of points in the order are being fulfilled in time. It is true that laying of the engineering pipes, the approach railroad, water line and power supply lines has been somewhat delayed. At the same time, resolution of these tasks does not tolerate procrastination, for 8 billion cubic meters of annual output is not the limit but only the "starting rate." It is planned to bring the supply of Shurtan gas to the national economy to 16 billion cubic meters per year by the end of the five-year plan.

Mubarek: Field, Plant, City

To the north of Karshi in an arid steppe that is as flat as a table, there is a whole "bouquet" of the richest gas fields: Dengizkul', Urtabulak, Mubarek, and Zevardy. This region has now become a major center of gas extraction in southern Uzbekistan. It is a unique center.

The fact is that the fuel obtained here contains a significant admixture of sulfur compounds. This feature determined both the technology of extraction, the methods of transporting, and the economic efficiency of the field operation.

The sulfur admixture is a serious obstacle: it erodes the steel pipes, eats away the metal of the treatment equipment, and requires additional measures for environmental protection. But the sulfur admixture is also the greatest good: our economy needs the 16th element in Mendeleyev's table. Sulfur is sulfuric acid, that is the basis for obtaining dozens of types of the most valuable chemical products, primarily mineral fertilizers: superphosphate and ammophos, auto-rubber and other most important items.

To extract sulfur from gas therefore, means to first prepare fuel for transporting long distances without additional chemical protection of the steel pipes. Secondly, this means to obtain an abundance of valuable chemical raw material.

The Mubarek gas refinery is solving both of these problems. In the beginning of the year, its units had an output sufficient to purify 10 billion $m^3$ of gas. It travels to the cities and villages of the RSFSR, Uzbekistan, Kazakhstan, Kirghiziya and Tajikistan. At the same time, the enterprises received 170,000 T of sulfur per year. It is characteristic that world chemistry has not yet known sulfur of such purity: 99.999999 percent "basic product" and only 1 millionth of a percent of admixtures. There is good reason why the sulfur of the Mubarek plant was awarded the state sign of quality.

The national economy needs more fuel, and the fields and gardens need more fertilizers. This is why it was decided:

to increase the annual processing of gas in Mubarek in the new five-year plan from 10 to 20 billion cubic meters,

to raise the annual production of sulfur in the same period from 170,000 to 464,000 tons.

The first stage of the outlined program is currently being implemented. Additional facilities were built in 1981 for purification of 5 billion $m^3$ of natural gas and to supply 300,000 T of sulfur per year. At the same time, it is necessary to build housing with total area of 50,000 $m^2$ in the city of Mubarek. This will house the personnel of the new units and shops, as well as the families of the builders.

These tasks are being solved by the collectives of the general contracting trusts of the USSR Ministry of Construction of Oil and Gas Industry Enterprises: "Mubarekgazpromstroy," "Bukharagazpromstroy," "Naipgazstroy," the organizations of the Ministry of Power and Electrification and the Ministry of Installation and

and special construction work. The subdivisions of the all-union industrial association "Soyuzuzbekgazprom" work together with them. Some perform construction, drilling and installing work, others act as the customers.

In order for everything to turn out well, the collectives, united by a common goal, have adopted a joint socialist commitment which is perhaps unparalleled in boldness and in the scales of the planned limits. They gave their word in the beginning of March that by the end of October, that is, in 7-8 months, the basic work to expand the Mubarek gas complex would primarily be completed. Thus, the standard periods for construction of the majority of facilities are considerably diminishing.

These facilities are complicated and require high precision, excellent quality of work and careful adjustment. There are 22 of them in the list added to the commitment.

Three units of gas purification, each designed to reprocess 1.5-2 billion $m^3$ per year.

Two gas fields at the Zevardy and Dengizkul'-Khauzak field with total output of 6 billion $m^3$ per year.

A gas pipeline from the Zevardy field to the plant, 43 kilometers.

The Kuyumazar-Mubarek water pipeline which extends almost 110 kilometers. It brings Zeravshan water to the steppe.

A compressor station with output of over 70,000 kW. Its task is to take from the plant the reprocessed gas and send it to the system of trunklines supplying Central Asia.

Power engineering facilities that have been called upon to provide the entire complex with electricity and heat. Power transmission lines and a distribution device for 220 kV, as well as a boiler house which is capable of producing 300 T of steam every hour are included. They also include equipment for reuse of spent water. This is very important in the arid desert.

Auxiliary shops and coolers, pumps and graduating towers, all possible types of reservoirs, a computer center and much more, without which modern automated production could not exist.

All of these facilities must be started up ahead of schedule, the builders and customers decided.

## Concentration of Forces

As they promised, already in September two out of three units of gas purification included in the third phase of the plant were operating and construction of the third was completed.

Both the contractors and the customers decided from the very beginning that the timely by-stage start-up of the facilities would be the measure of success, and not the pursued "wave." All the collectives strived for this, including the services of capital construction of the Mubarek plant. It provided the contractors with the documents precisely and on time, and supplied the financing and equipment.

Those who did not lay the concrete or perform assembly operations, but nevertheless made a weighty contribution to the general work also deserve praise. These are the planners from the institutes "VNIPIgazodobycha" (Saratov), "Giprogazoochistka (Leningrad), central design office "Neftekhimmashstroy "(Podol'sk). The third phase of the plant, equal in output to the first, occupies an area which is a fourth smaller, consumes somewhat less energy, and used thousands of tons less high-grade scarce steel. Whereas the first phase cost R 120 million, the second and third together cost the same R 120 million.

The acceleration began with a good start. The primary goal of further work was concentration by turn of the forces in the main directions, at the start-up facilities.

The first business of "Mubarekgazpromstroy," "Sredazneftegazmontazh" and other collectives was to concentrate workers and mechanisms at the unit of gas purification No 3. It was started up earliest of all by commitment. "Bukharagazpromstroy" sent its brigades to the water line route. The teams "Naipgazstroy" that came to the assistance from fraternal Turkmenia, together with the fourth administration "Uzbekgazpromstroy" were involved in installing units of comprehensive gas preparation at the new fields.

Work was done on enormous spaces, from Bukhara to the right bank of the Amu. It was necessary to correlate and rapidly solve dozens of problems. Some kind of coordinating center was needed, the more so since many workers belonged to different union departments.

Such a center was set up: the headquarters of the Uzbekistan Communist Party Central Committee at the construction of the Mubarek gas complex. After approving the commitments of the collectives there, the Central Committee simultaneously outlined measures to help them. It is no exaggeration to say that the birth of the headquarters was the most important of these measures. Its leadership was entrusted to the management of the association "Soyuzuzbekgazprom," at the same time, the responsibility of the customer for timely execution of work was stressed.

With the cooperation of the headquarters, the tight places that develop here and there are rapidly "braced." It is hardly possible to avoid omissions at a construction site of such scale. Every month brought comforting news. The unit for sulfur production was connected first. The installers and adjusters set the tone for all the other workers, after guaranteeing start-up of the equipment "from the first pressing of the button." The management of the plant, signing the inspection act, noted the high quality fulfillment of all the work. Now there is as much sulfur as is successfully unloaded.

Treatment units Nos 3 and 2 were started up in the same way, immediately, from a "half turn." It was somewhat more difficult to equip the water line because the initial project had to be redone. But even this was overcome.

Acceleration of work required acceleration of shipments. There was a special shortage of precast reinforced concrete, certain metal sections, and wooden parts for graduating towers. Each supplier also developed a search for reserves under the control of the headquarters and with the cooperation of the correspondents' station of the republic newspapers and UzTAG formed in Mubarek at the recommendation of the Uzbekistan Communist Party Central Committee. "Uzstroyindustriya" distinguished itself. The plants of this association prepared additional sets of fittings in order to ship the scarce beams, columns and other parts made of precast reinforced concrete to Mubarek on time. The Tashkent plant of structural designs, the Tashkent electrical engineering plant, and many other enterprises responded.

At the same time, initiatives and bold engineering solutions began to arise more frequently "from nothing" at the actual construction sites where a concern was felt for the smooth course of construction.

The workers and specialists of the ninth administration "Sredazenergomontazh" needed only 25 minutes to lift the 110-ton tower of one of the units, the desorber, into a vertical position. The steel bulky object, 30 m high, occupied its position on the foundation literally before your eyes. The first of these units was put up 8 years ago bv winches in a whole month, very carefully, millimeter by millimeter. Now two cranes drove up, 100 and 120 T, cables were attached, and voila! It is true that they had to lengthen the crane booms and make many complicated calculations. But everything was compensated for when the month was compressed into 25 minutes.

The developers of the new gas field Dengizkul'-Khauzak operated even more efficiently. Engineering practice knows of many cases where during the start-up and adjustment work, the facility is 1.5-fold greater than the rated output. However, precisely this occurred in the steppe near Mubarek.

The plan noted: the fuel coming from the wells should be fed to two units of comprehensive gas preparation (UKPG) similar to those that the Shurtan complex has. Each UKPG has output of 1 billion m$^3$ per year, a total of 2 billion. It was necessary to install a third nearby, a reserve in case one of the main units malfunctioned during the maximum load.

All three UKPG were assembled at the end of June. The quality of work was so high that the question was involuntarily raised: why should the two units operate while the third is idle? This is not economical.

"But a reserve is needed."

"Yes, a reserve is needed," said the engineers of the administration "Mubarekgaz" (the customers). "This is what we propose..."

Since the builders from "Naipgazstroy" were greatly ahead of the standard schedule and there was spare time, it was suggested that they transfer yet another set of UKPG equipment for another field here, to Dengizkul', and assemble it here. For it does not make any difference, the fourth unit has to be subsequently installed and the field will grow.

An urgent request was made to the planners, the Novosibirsk branch of the institute "NIPIgazdobycha," and the"go-ahead" was received from them. The contractors readily agreed to the extra-plan work. The truckers of "Soyuzuzbekgazprom," after mobilizing a sharpness were able to rapidly ship the units to the site. Some of them weighed over 100 T.

As a result, by the time the state commission arrived, it was presented with not three, but four ready units. The Dengizkul'-Khauzak field will produce not 2 but 3 billion $m^3$ of fuel per year.

It is now the time of completion work in Mubarek. A large part of the outlined work has essentially been done. It remains to bring one of the treatment units and the compressor station to rated output, and to start up a series of auxiliary facilities, and of course, eliminate the so-called omissions.

The shortage of housing remains the most serious problem of the Mubarek complex. The only ones who have not coped with the outlined limits are the brigades who erect houses in the new microregions of the young city.

We recall the words that resounded from the tribune of the 26th CPSU Congress: "The reports from the site of start-up of the new industrial facilities usually do not indicate what has been done for those who will work here, how much housing has been constructed, how many kindergartens, libraries and dispensaries. Let us agree to consider these reports actual only in that case where the program of housing and cultural-general construction at the facility which is stipulated by the plan is also fulfilled."

The Mubarek complex will soon mark its 0th anniversary. The country has received from here 80 billion $m^3$ of purified gas and over a million tons of sulfur. The plant has not known such a rapid increase in output as today's. Thousands of people have worked selflessly and heroically, placing all their efforts, creative energy and talent in the work.

The labor initiative must be completed worthily. This has occurred. While this issue of the journal was in production, the state commission signed an act for the start-up in record short periods of all the facilities in the third phase of the Mubarek gas refinery. Comrade Leonid Il'ich Brezhnev warmly congratulated the builders, installers and gas workers for the outstanding labor victory.

COPYRIGHT: "Ekonomika i zhizn'", 1981

9035
CSO: 1822/95

## MOGILEV GAS PIPELINE OPEN

Minsk SOVETSKAYA BELORUSSIYA in Russian 8 Jan 82 p 1

[Article (BELTA): "'Blue Fuel' in Mogilev"]

[Text] A blue-flamed torch was lit in Mogilev in honor of successful completion of construction of the 90-kilometer Orsha-Mogilev terminal branch natural gas pipeline from the Torzhok-Minsk-Ivatsevichi trunk pipeline. The construction workers of Trust No 2 of the Soyuzgazpromstroy All-Union Production Association built this line in 6 months -- twice as fast as the normal rate. The new line is capable of conveying up to 1 billion cubic meters of "blue fuel" per year. It costs one third as much as the hauled-in liquefied gas which the city has been using in the past.

The residents of Mir-2, the city's largest residential microrayon, will be the first customers for this natural gas. This year natural gas will also be hooked up to the following industrial enterprises: the Strommashina Plant imeni 50th Anniversary of the Great October Revolution, and the Metallurgical Plant imeni Myasnikov, which have previously burned fuel oil.

Subsequently natural gas will be provided to all the residential microrayons in Mogilev and Shklov, to communities adjacent to the pipeline and, by the end of the five-year plan -- to all enterprises and boiler houses of the industrial area situated in the right-bank part of Mogilev. This will produce great savings: expenditures on fuel in industry will be reduced 30-fold. Specialists calculate that labor productivity will increase by 1 percent by converting over to natural gas.

The construction workers of Trust No 2 of the Soyuzgazpromstroy Association, of Administration No 1 of the Spetsstroymontazh Trust of the Ministry of Construction of Petroleum and Gas Industry Enterprises, the work forces of Mogilev Trust No 12, 17, Lavsanstroy, Mogilevsel'stroy, Mogilevvodstroy, Oblmezhkolkhozstroy, and other installation and specialized organizations worked selflessly on laying the gas pipeline and building the first unit of the municipal gas supply system.

A rally was held on 7 January in Mogilev to honor the labor victory of all participants in construction of this natural gas pipeline. V. V. Prishchepchik, first secretary of the Mogilevskaya Oblast Party Committee, read aloud a congratulatory message from the Central Committee of the Belorussian Communist Party, the Presidium of the BSSR Supreme Soviet and Council of Ministers to the construction workers, erection and installation crews, operating personnel, party, trade union and

Komsomol organizations, to all those who took part in construction of the Orsha-Mogilev natural gas pipeline, congratulating them on their labor victory.

A. P. Donets, manager of Trust No 2 of the Soyuzgazpromstroy Association, P. M. Liskevich, director of the Zapadtransgaz Association, A. A. Samusev, brigade leader of the Mogilev Installation Administration of Belsantekhmontazh Trust No 1, and M. P. Esminovich, welder of the Mogilevoblgaz Production Association also spoke at the rally.

3024
CSO: 1822/79

## FUELS

### BALAKHANY OIL REPORT

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 30 Dec 81 p 1

[Article by L. Aleynik, Balakhany-Baku: "Into the Mine for Oil"]

> [Excerpt] The middle of next year, 1982, is already on the labor calendar of the work force of the Baku section of the Shakhtspetsstroy Trust. The mine construction workers are successfully continuing the shock-work duty shift in honor of the 60th anniversary of the USSR.

What are these representatives of a profession which is so unusual for an oil producing region doing here? They are doing their usual job, a job which at the same time is new for them and highly interesting.

In the community of Balakhany on the Apsheron Peninsula, Azerbaijan's oldest oilfield area, they have long since become accustomed to a new drilling rig being set up and the drillers proceeding to drill down to a new, as yet untouched formation. But the people in this area have never before seen such a huge rig as this one, which towers above the entire oilfield. This drilling rig is drilling not simply a well but an entire mine.

It is truly a unique structure. Success in this experiment is opening up highly attractive and extensive prospects for the oil producers.

"The Balakhany oilfield," states Dmitriy Vasil'yevich Solodovnikov, manager of the Shakhtspetsstroy Trust of the USSR Ministry of Installation and Special Construction Work, "has been almost fully worked out by existing oil production methods. Many wells have been shut down for good. The crude here is extremely viscous, and therefore producers can extract crude by pumping only to a certain limit, and are forced to accept the fact that a fair amount of crude remains in the ground. But this viscous, hard-to-produce crude possesses unique properties, and its value for the oil refining and petrochemical industry is unquestioned. Therefore one can well understand the patience and enormous interest in our project by the oil workers of Azerbaijan and other republics, for if the experimental-commercial oil mine which we are constructing proves out well, oil production will once again begin in fields which have been worked out but which at the same time are still very rich in reserves of crude -- they will be reborn."

There is an unceasing roar of engines above the site. Huge drills are biting into rock below the 150-meter level.

"You see," stresses Dmitriy Vasil'yevich, "we are putting down two vertical shafts 6 meters in diameter to a depth of 340 meters by machinery alone. Nobody will go down the shafts until we begin installing equipment. We shall even be installing the cast-iron tubing shaft liners from the surface. This is an enormous advantage and a guarantee of a safe job."

For the time being one can see how this unusual oil producing operation will function only by looking at the drawings. When the vertical shafts are ready, when hoist and ventilation equipment is installed in them, miners will go down and drive horizontal tunnels, from which they will drill a great many inclined holes up through the oil-bearing formations. Then superheated steam will be driven into these bores, and the viscous crude, heated to a liquid state, will flow down the bores into underground crude collectors. From there it is a simple matter: powerful pumps will bring it to the surface.

It took 120 rail flatcars to haul the drilling rig, built by Uralmash, to Balakhany. Once at the site, it was rapidly assembled by experienced drillers, rig mechanics, and riggers from the Donetsk Mine Construction Administration and other subdivisions of the trust. The first shaft has already been sunk to almost half the planned depth. A rounder bit is presently at work downhole, and surface crews have completed assembly of all shaft liner tubing rings. Soon the lining will be installed in the bore, and the drilling rig will be moved on rails to a site 150 meters away -- work will begin on sinking the second bore.

3024
CSO: 1822/79

## KASPMORNEFTEGAZPROM SOCIALIST PLEDGES

Baku VYSHKA in Russian 6 Jan 82 p 1

[Article: "We Shall Give the Country More Oil!"]

[Text] Implementing the resolutions of the historic 26th CPSU Congress and 30th Congress of the Azerbaijan Communist Party, and taking active part in the All-Union Socialist Competition, the work force of the Oil and Gas Production Administration imeni N. Narimanov achieved ahead of schedule the target for the first year of the 11th Five-Year Plan and adopted socialist pledges. They above-target produced more than 20,000 tons of crude and 90 million cubic meters of natural gas. An additional 14,000 tons of crude was delivered to the refinery, with additional product sales of almost 1 million rubles. The work force saved 6 million kilowatt hours of electricity, 16,000 tons of standard fuel, achieved more than 40 million rubles in capital investment, and put into operation a gas dehydrator unit with a throughput capacity of 9.4 million cubic meters of gas per day. An aggregate of measures were carried out to achieve further improvement of working, living and recreation conditions for offshore oil workers.

Guided by the decisions of the November (1981) CPSU Central Committee Plenum, the points, conclusions and concrete instructions contained in the address at the plenum by CPSU Central Committee General Secretary Comrade L. I. Brezhnev, the administration's workers, engineers, technicians and white-collar employees, working persistently to adopt new equipment and advanced processes, are seeking out internal reserves aimed at further improvement in the level of gas and oil production as well as improved efficiency and quality of work at all levels. Extensively engaged in competition to honor the 60th anniversary of the USSR in a worthy manner, the oil workers are pledging to make the new year a year of shock-work labor and are adopting the following socialist pledges for 1982 and the 11th Five-Year Plan:

to complete fulfillment of the 11th Five-Year Plan by 19 December 1985, and to produce above target 70,000 tons of crude and 150 million cubic meters of natural gas;

by improving oilfield exploitation technology, by observing an optimal well production regimen, and by adopting secondary and tertiary methods of producing crude, to accomplish ahead of schedule the 1982 oil and gas production targets -- to produce above target 7,000 tons of crude and 12 million cubic meters of gas, to achieve above-target sales of 230,000 rubles, and 2.5 million rubles for the five-year plan;

systematically to improve engineering management of the well inventory, to bring six wells back into production in 1982 by seeking out and fully utilizing internal reserves, to boost effectiveness of geological-technical measures to 98 percent, resulting in additional production of not less than 90,000 tons of crude, and approximately 400,000 tons over the five-year plan;

on the basis of employment of advanced labor methods, automation of production processes and mechanization of labor-intensive jobs, to overfulfill the labor productivity target by 1 percent, resulting in 500,000 rubles worth of production;

strictly to observe economy and thrift measures, efficiently to utilize oilfield machinery, equipment and material resources. To save in 1982 2 million kilowatt hours of electricity, 2,000 tons of standard fuel, and in the 11th Five-Year Plan -- 14 million kilowatt hours of electricity and 20,000 tons of standard fuel;

to accomplish 36 million rubles of capital investment in 1982, to bring online gas-lift compressor station No 6, with a capacity of 1.5 million cubic meters of gas per day, and an oil and gas production administration automated control and management system. To accomplish 150 million rubles of capital investment in the five-year plan, to complete construction on compressor stations No 7 and 8, automation and dispatcher control of gas-compressor facilities, and renovation of the oil and gas initial processing and transfer systems, and changeover of electric power supply to a 110 kilovolt substation;

to boost and encourage inventor and efficiency innovator activities, and to achieve 220,000 rubles savings from adoption of inventions and efficiency innovation suggestions as well as elements of scientific organization of labor;

implementing the work force social and economic development plan in 1982, to train 150 persons in the general-curriculum and technical schooling system, to boost the qualificational level and teach related jobs to 120 workers, and to involve all administration personnel in economics training by the end of the five-year plan. To begin construction, with the administration's manpower and resources, of a 70-unit apartment building in the community of Primorsk;

continuously to increase and improve work in the area of ideological-moral indoctrination of workers, strictly to observe production and labor discipline, and to endeavor to earn the title "Branch Exemplary Enterprise";

to give patronage assistance to the Sovkhoz imeni S. M. Kirov in Tauzskiy Rayon, in the amount of 12,000 rubles, and 60,000 rubles for the five-year plan, and to provide this farm with needed mechanical and electrical equipment.

The workers, engineers, technicians, and white-collar employees of the Oil and Gas Production Administration imeni N. Narimanov are resolved to honor the 60th anniversary of the USSR with excellent production results, to make a worthy contribution toward implementation of the tasks specified by the 26th CPSU Congress and 30th Congress of the Azerbaijan Communist Party, and to achieve further improvement in production efficiency and work quality, and successful fulfillment of the plans and pledges of the 11th Five-Year Plan.

The socialist pledges were discussed and adopted at a meeting of the administration work force.

3024
CSO: 1822/79

# CASPIAN OFFSHORE DRILLING PROBLEMS

Baku VYSHKA in Russian 9 Jan 82 p 2

[Article by inspection team members driller U. Usbakhanov, volunteer correspondents A. Mamedov and S. Bagdiyan, and VYSHKA correspondent O. Nechipurenko, Oil and Gas Field imeni 28 April -Neftyanye Kamni-Baku: "To the Seven Winds"]

[Text] 1. Brigade of Pioneers

Considerable manpower and resources are presently being concentrated on the offshore Oil and Gas Field imeni 28 April, which was discovered in the last five-year plan. The crude flowing from the two wells drilled from a fixed platform attest to the great future of this field, located in one of the most turbulent parts of the Caspian.

The road to success was a difficult one. The drilling brigade from the Neftyanyye Kamni Offshore Drilling Operations Administration, led by outstanding foreman Hero of Socialist Labor Israfil Guseynov, who is presently chairman of the republic committee of the trade union of workers of this industry, had to surmount many difficulties before reaching pay dirt.

The latest equipment and technology helped: high-output turbodrills, special stabilizers and drill pipe, and the most modern reagents for preparing drilling mud. An important role was also played by the creative initiative of the members of the work force -- drillers Yu. Kozlov, G. Ibragimov, and A. Babakhanov, their helpers K. Musayev, I. Kazibekov, and many others. The field's first well was drilled to the planned 4,500 meter depth 6 months ahead of schedule.

The next two wells were drilled and completed just as rapidly, and are now producing up to 600 tons of crude each day.

However, in the first year of the 11th Five-Year Plan things did not proceed with this work force as planned. Well 7, which was scheduled for completion by the end of the year, has not yet reached the planned depth. And one is hard put to blame this team of pioneers, for they began drilling four months behind schedule. Work was delayed by the need to redesign the first drilling platform footing in the Caspian placed at a water depth of more than 80 meters, as well as a decision made by the Kaspmorneftegazprom All-Union Production Association and the Oil and Gas Production Association imeni 22d CPSU Congress to retest for productivity Well 1, which was located outside the oil pool margin.

Rebuilding of the platform footings was completed fairly quickly, but testing of the "dry" well dragged on for several months, due to various organizational foul-ups, at a cost of many tens of thousands of rubles. This is what they cite for the most part at the Neftyanyye Kamni Offshore Drilling Operations Administration when explaining the delay in drilling Well 7.

But even since the brigade began drilling the new well, things have not gone any better. When we visited the drilling rig, it was standing idle due to a lack of weighting material for the drilling mud.

"We have been short-supplied on so many things since drilling began," related foreman G. Aliyev. "Drill pipe, as well as spider for running in casing and for logging...."

In accordance with the plan, the wellbore deflects considerably from the vertical. In these conditions there is a considerable danger of pipe snapping or wedging in the bore. This is confirmed by the experience of drilling the two previous wells. Incidentally, the comparatively meager selection of chemical reagents at this drilling rig makes it impossible to maintain the required drilling mud parameters, and this can also cause problems.

In all the years of the 10th Five-Year Plan the work force presently headed by tool pusher A. Ismaylov was a winner in socialist competition and was time and again named the best among the drilling brigades of the Ministry of Gas Industry and the Kaspneftegazprom VPO [All-Union Production Association]. It also worked hard to accomplish the 1981 target: this rig was erected very quickly thanks to its efforts, resulting in savings of more than 100,000 rubles. The brigade is continuing to do everything it can to get one more well into production.

## 2. On a Floating Rig

The string of bright lights marking the Caspian's first semisubmersible drilling rig, the Kaspmorneft', was visible off in the distance. The closer we approached it, the more impressive its bulk became. Designed for drilling 6-kilometer wells in water 200 meters deep, it sits in the center of the new field, rocking almost imperceptibly, secured in place by eight huge anchors.

The rig crew had worked long and hard to master the equipment, practically all of which was new and unique. They also successfully coped with the first surprise, which are so frequent in drilling operations. In Well 5, which they had begun drilling in the middle of the year, they unexpectedly hit gas at a shallow depth. This complication was quickly handled and, it seemed, this success should inspire the crew of the rig Kaspmorneft' and infuse them with new energy for the assault on the unreconnoitered depths.

Exactly the opposite happened, however. Gross violations of labor and process discipline followed one after the other. In the middle of September, for example, driller E. Yusifov, in the presence of A. Ismaylov, chief of the Central Engineering-Technological Service of the MURB [Offshore Drilling Operations Administration], which handled specialized equipment, the then acting tool pusher A. Khalilov, and drilling foreman B. Piraliyev, committed an act of negligence which led to a serious equipment breakdown. After the problem was corrected, the blowout preventer stack was dropped as it was being lowered to the seafloor, damaging the wellhead. After considerable efforts, they succeeded in bringing the BOP stack up, but this brought an end to the drilling.

Thus the first well to be abandoned for technical reasons appeared on the map of this oilfield. And one could only hope that the top officials at the MURB and the Kaspburneftegazprom Association would take effective measures to ensure that such a thing was not repeated in the future. Such measures were not taken, however. As a result one of the rig's 120 ton anchor chains was irretrievably lost at the new site, as we learn from the official report of the investigating commission, due to an inadequate level of skill and qualifications on the part of rig assistant tool pusher E. Zakharov and rig mechanic V. Kolesnik. Also contributing to this incident was the absence of a coordinated plan of operations with the Kaspneftegazflot vessels participating in support roles.

The crew of Kaspmorneft' is presently drilling a new well, which is proceeding fairly well. But there is no guarantee of a successful operation: it is clearly evident that the level of qualifications and attitude toward the job on the part of many members of the drilling crew leave much to be desired. During our inspection visit pipe was being tripped out, which was to be placed on the rack. Assistant driller V. Usol'tsev walked out on the drawworks "arm" to tighten the plug, risking falling onto the rig floor.

"Of course he shouldn't do that," agreed driller V. Soldatov, who was observing this operation, "but I don't see anything particularly bad about it."

As they say, everything in its time....

### 3. The Future of a Deep-Water Field

It is seen in the two-tiered fixed platforms for drilling and production of a 10-12 well cluster.

Construction of the first of these platforms is currently in progress at a site where the sea depth exceeds 100 meters. Two modular units of this unique structure were delivered to the site last year. This was no easy job: these units, weighing more than 2,000 tons each, assembled on shore of pipe almost one and a half meters in diameter, were floated to the Field imeni 28 April. But before these remarkable events took place, the construction people had to solve a great many problems. Specialists from the Kaspneftegazstroy and Kaspmorremstroy trusts, the Kaspneftegazflot Administration of the Kaspburneftegazprom Production Association, and the Kiev Institute imeni Paton and the Gipromorneftegaz Institute developed the Soviet Union's first process for welding thick-walled pipe, special equipment for extending piles, so-called tsentratory [center aligners], and successfully employed for driving them into the seafloor a giant steam hammer mounted on the floating crane "Azerbaydzhan."

The main part of the job has now been completed: both units of the future deep-water platform, the platform and seabed supporting unit, are securely in place at the designated site over the Field imeni 28 April. It would seem that erection and equipment installation work should be proceeding at full speed. But that is not the case.

We have already mentioned that this area is one of the stormiest in the Caspian. The sea is calm here only a few days a year. It is therefore important to utilize every day of good weather to the maximum. Therefore one can understand our surprise when we witnessed, precisely at such a time, total inactivity on the platform. The leading brigade of fitters and riggers from SMU [Construction and Installation Administration]-4 of the Kaspneftegazstroy Trust, headed by D. Boldyrev, and equipped with a 100-ton crane and other requisite equipment, was standing idle. And five piles were standing on the platform , jutting skyward, waiting to be driven....

"What can we do?" sighed section chief A. Tadashev, who greeted us. "We are waiting for the crane ship. In the meantime we have done everything we can do -- we have extended the piles and secured the collars...."

Construction work is in full swing. They will be driving five piles into the seafloor and joining them by welding. This will be followed by drilling into the seafloor, and anchoring. Of course it would be best to do all this work with the aid of the above-mentioned floating crane "Azerbaydzhan," which is presently in Astrakhan' working on the important job of erection of the new "Shel'f-2" semisubmersible rig. As we were told by A. Dadashev, however, it could be replaced temporarily by other crane ships: the catamaran "Kerogly," the "Cheleken-1," and the "Cheleken-2." Beyond that the work schedule for the SMU-4 construction workers is not too clearly delineated: we were told that the Gipromorneftegaz design people have not yet given them a firm final date for installing the modular units with the drilling equipment. Specialists from this association, together with workers from the Kaspburneftegazprom Production Association, are presently assembling them on shore, and yet the modular units were to be delivered to the drillers in mid-1980.

* * *

This is the current status of this important exploratory drilling project. In spite of achieved success, as we see, the pace of drilling and construction-installation work leaves much to be desired. And this is happening at the time when it was stated at the December (1981) Plenum of the Azerbaijan Communist Party Central Committee that all manpower and resources must be concentrated at the present time on developing the most promising oil and gas fields, including the Field imeni 28 April.

According to the five-year plan, by the end of 1985 16 deep wells are to be drilled here, with additional crude oil pipelines, to be laid along the floor of the Caspian Sea to the Apsheron Peninsula. This is no easy job. Many of the problems connected with development of this field are facing scientists and designers, construction workers and drilling crews for the first time in the Soviet petroleum industry. But these problems can be solved. It is their duty to make a worthy contribution toward implementation of the resolutions of our party's 26th Congress and the November (1981) CPSU Central Committee Plenum, toward further strengthening this country's fuel and energy base.

3024
CSO: 1822/79

## FUELS

### BRIEFS

**URENGOY-NOVOPSKOV PIPELINE**--Tyumen', 15 Jan (TASS)--Construction has begun on the Urengoy-Novopskov natural gas pipeline. Each year it will convey more than 30 billion cubic meters of natural gas. New wells are being drilled and two additional natural gas processing plants are being built at the headwaters of this river of gas -- the Urengoy gas field. Each of these plants will be able to feed more than 40 million cubic meters of gas into the pipeline every 24 hours. The length of the Tyumen' section of the new trunk pipeline is 850 kilometers in length. The Siberians have resolved to complete line construction a month ahead of schedule. [Text] [Moscow PRAVDA in Russian 16 Jan 82 p 1] 3024

**TYUMENGAZPROM PRODUCTION PLEDGE**--The work force of this association has pledged to achieve in 1982 the largest natural gas production increase in the history of development of the natural gas industry in this oblast, an increase of 35 billion cubic meters, to provide the nation's economy with 1.5 billion cubic meters of gas above target, and to overfulfill the labor productivity growth target by 8 percent, all this to be achieved by accelerated development of the Urengoy field, movement on-stream ahead of schedule and efficient utilization of gas field facilities in the production and transport of natural gas, adoption of new equipment and advanced know-how, and improvement of production management. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 3024

**AZERBAIJAN EXPLORATORY DRILLING**--The brigade of foremen Rauf Mamedov and Mamedali Kagramanov of the Bulla Offshore Exploratory Drilling Administration has celebrated the approach of the new year with a mighty flow of natural gas. Well 44, drilled by this brigade on the northern flank of the Bulla-more field, has been connected to the trunk pipeline. Working from a depth of 6,055 meters, it produces 700,000 cubic meters of natural gas and 200 tons of gas condensate per day. Well 44 is the 16th well off Bulla Island sunk to zone 7 in this field, from which all the natural gas in this area comes. Dozens of additional deep wells are presently being drilled, some of which are targeted at zone 8, an even deeper and more complex zone in this gas field. [Text] [Baku VYSHKA in Russian 26 Dec 81 p 3] 3024

**NEW OFFSHORE RIG**--Vyborg, Leningradskaya Oblast--The Vyborg Shipyard has begun building rigs which will perform continental-shelf exploration and production drilling for oil and natural gas. The November (1981) CPSU Central Committee Plenum once again stressed the importance of development of country's fuel and energy complex and growth in oil and gas production. Continental-shelf areas contain commercial-quantity hydrocarbon reserves. Rigs of the Vyborg type make it possible to drill wells to a depth of 6 kilometers, in water 200 meters deep. These rigs will be held in position above the wellhead by a strongly-anchored mooring system, while the position of the drilling platform will be monitored by a special electronic measuring system. [Tass correspondent][Text] [Baku VYSHKA in Russian 9 Jan 82 p 2] The Vyborg Shipyard in Leningradskaya Oblast has begun building rigs for continental-shelf exploration and drilling for oil and natural gas. Rigs of the Vyborg type make it possible to drill wells to a depth of 6 kilometers, with a water depth of 200 meters. The platforms will be held in position over the wellhead by a strongly-anchored mooring system, while monitoring of the platform's position will be handled by a special electronic measuring system. [Text] [Moscow PRAVDA in Russian 9 Jan 82 p 1] 3024

ENHANCED CRUDE OIL RECOVERY--Groznyy--A Takum steam injection unit, for enhanced recovery of crude from old wells, has gone into operation near Groznyy. The Checheno-Ingush ASSR is called the "black gold" republic. The oil workers of this mountainous region are bringing more and more new fields into production. But they do not forget about the old, poorly-producing formations. These still contain considerable quantities of valuable hydrocarbons. Only about 30 percent of crude oil reserves, for example, have been extracted from the Yuzhno-Voznesenskoye oilfield. The remainder is still in the ground: formation pressure has declined, and in addition the crude in this field is extremely viscous, which makes extraction difficult. Scientists have come to the rescue. Several years ago a Takum steam injection unit went into operation near the village of Voznesenskaya. Drillers have been using this unit to inject steam superheated to 300 degrees into the producing formation. Heated by this steam, the crude oil in the formation is driven to the surface under pressure. A second unit has now joined the first Takum. A third unit is scheduled to come on-line. The Takum unit will help extract hundreds of thousands of tons of "black gold" from old producing formations. [By IZVESTIYA correspondent A. Kazikhanov] [Text] [Moscow IZVESTIYA in Russian 6 Jan 82 p 1] 3024

MOKEIKHA-ZYBINSKOYE PEAT--The Mokeikha-Zybinskoye peat enterprise in Yaroslavskaya Oblast is the country's largest. Each year it harvests more than 2 million tons of peat for heat and electric power plants. The peat harvesting season in this area is short -- 106 calendar days. But what if we have continuing rain, if the peat bogs turn into solid mush? [Excerpt] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Sep 81 p 1] 3024

CAUCASUS GEOTHERMAL POWER--Budennovsk--A first well, drilled to a depth of 4,500 meters near the town of Budennovsk, produced a powerful flow of hot water and steam. The Northern Caucasus is considered to be a region of young volcanism. Kyasulinskaya, in the eastern part of this region, is considered to be one of the most promising geothermal areas. There are no big electric power plants in this area, but a large power-consuming enterprise is in operation here -- the Budennovka Plastics Plant. It was this which determined the construction site of a 10-megawatt experimental-commercial geothermal electric power station, the first in Stavropol'skiy Kray. The geothermal water will also be used to heat housing, greenhouses, and livestock buildings. Station output will increase several times over in the near future. [By L. Lyudova] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Nov 81 p 2] 3024

GEOTHERMAL ENERGY--Krasnodarskiy Kray--We know that the bulk of the cost of growing vegetables in greenhouses goes for heating these buildings. In our country's central zone, for example, a 10-hectare greenhouse operation requires as much heat as is expended on the household and municipal requirements of a city with a population of 60-70 thousand. Under conditions of a growing shortage of organic fuel, a search is in progress for other sources of energy. Such a gift of nature as geothermal water is being comprehensively utilized in Mostovskiy Rayon, Krasnodarskiy Kray. Water obtained from geothermal wells is used to heat greenhouses, and then, after cooling to 40-50 degrees Celsius, is piped to buildings housing livestock -- heating a poultry house, hog house, and cow barn in the winter months; it is also utilized in preparing feed. From here the water, cooled to 25-30 degrees Celsius, is piped into fish ponds to achieve more intensive growth of market-size fish and fry. Most of the administration buildings and residences in the village of Mostovskaya are heated and provided with hot water thanks to this geothermal source. Local geothermal water is employed in woodworking, wool washing, and in the production of concrete at a reinforced concrete products combine.... During the current five-year plan the greenhouse combine will be expanded to an annual production of 10-11 thousand tons of vegetables by 1985; fresh fish will be produced year-round in fish ponds, and the entire village of Mostovskaya will be converted over to a geothermal hot-water supply. Well drilling, construction of the greenhouse combine, as well as of the entire multibranch economic complex here is being financed not by state subsidies but by contributions by kolkhozes on a shares basis. As was demonstrated at an all-union conference in which major Soviet scientists participated, the geothermal project in Mostovskiy Rayon, Krasnodarskiy Kray, is a unique testing ground on which scientists and practical experts can test new forms and methods of utilizing geothermal heat -- a continuously renewable source of cheap energy. [By IZVESTIYA correspondent A. Dergachev] [Text] [Moscow IZVESTIYA in Russian 3 Oct 81 p 2] 3024

SOLAR ENERGY CONFERENCE--Ashkhabad--A joint enlarged meeting of the Applied Research Section of the USSR Academy of Sciences Scientific Council and the Photoelectric Conversion of Solar Energy Section of the Scientific Council of the USSR State Committee for Science and Technology addressed problems of utilization of solar energy in the nation's economy. It was attended by more than 50 scientists from the academies of sciences of the Ukraine, Belorussia, Armenia, Moldavia, as well as branch scientific research organizations of many cities throughout the country. "Every day great quantities of fossil fuels, primarily coal, oil and gas, the natural supplies of which are by no means limitless, are burned up in our furnaces," stated Candidate of Physical-Mathematical Sciences Babamurad Bazarov, director of the Turkmen branch of the All-Union Scientific Research Institute of Sources of Electricity. "Therefore problems of improving existing and developing new methods of energy conversion are becoming increasingly more critical. Utilization of radiant energy can produce substantial fuel savings." Considerable research work is being conducted in this area in Turkmenistan, where there are about 300 sunny days a year. Concentrator-type solar power units have been built here, generating from 10 to 1500 watts, which are used for powering irrigation system pumps in the Karakum desert. For 3 days scientists discussed scientific and practical advances in the area of direct conversion of concentrated solar radiation and shared their results and experience. [Turkmeninform] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 30 Oct 81 p 3] 3024

NEW BOOK ON COAL PRODUCTS--Respected comrade! The publishing house "Nedra" is preparing a new book for printing. The title is: "Tsena i kachestvo ugol'noy produktsii" [Price and Quality of Coal Products], by D. Ya. Tolkatser, 1982, 15 pages, 75 kopecks. The book covers specific features of the link between quality and cost estimates of products. It reveals the problem of improving price-formation for coal products. It is designed for engineering and technical and scientific workers of the coal industry. You can acquire the book in local bookstores distributing scientific and technical literature, or order it through the book mail order department of the stores: No 17, 199178, Leningrad, V. O., Sredniy prospekt. 61; No 59, 127412, Moscow, Korovinskoye shosse, 20. [Text] [Moscow UGOL' in Russian No 12, Dec 81 p 10] [COPYRIGHT: Izdatel'stvo "Nedra" "Ugol'" 1981] 9035

CSO: 1822/103 END

# END OF
# FICHE
# DATE FILMED

April 2, 1982